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HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS, OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED BY

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Plate 1101.

PENTACHÆTA GRACILIS, *Benth.*

Compositæ, Tribe Asteroideæ.

P. gracilis, *Benth. sp. nov.;* caule erecto stricto subcorymboso-ramoso, receptaculo convexo subconico, styli disci ramis acutiusculis.

Hab. Mexico; gneiss rocks, near Juquila Zacatepeque, at an elevation of 4000 to 6500 ft., prov. Oaxaca, *Galeotti,* n. 2057; described from specimens in the herbarium of the Royal Museum, Brussels.

Herba annua, erecta, subpedalis, ramis paucis gracilibus subfiliformibus, basi pilis crispis sublanata, superne glabra v. parce pilosula. *Folia* alterna v. inferiora opposita, linearia v. inferiora lineari-lanceolata, acuta, integerrima v. rarius paucidentata, inferiora pollicaria, superiora minima angustissima. *Capitula* ad apices ramorum pedunculata, parva. *Involucrum* late campanulatum, circa 2 lin. diametro, bracteis 2-seriatis subæqualibus angustis rigide carinatis margine anguste scariosis. *Receptaculum* convexo-conicum, nudum. *Corollæ* ♀ 15–20, 1-seriatæ, ligula patente linea paullo longiore 3-dentata; ♂ involucrum paullo superantes, limbo cylindraceo vix ampliato apice pubescente brevissimeque 5-fido. *Antheræ* basi obtusæ, integræ. *Styli fl.* ♂ rami apice leviter complanati, in appendices acutiusculas producti, dorso papillosi. *Achænia* juniora linearia, glabra, pappi setis 5 tenuissimis subbarbellatis, ima basi brevissime dilatatis.

I had some hesitation in referring this plant to *Pentachæta*, as the style-branches with their appendages appeared to be rather broader (not quite so obtuse, however, as represented in our Plate), and the opposite lower leaves seemed to connect it technically with *Helenioideæ*; but on the whole it appears too nearly allied to *P. aurea*, Nutt., to be generically separated from it. The latter may be technically distinguished by the following diagnosis:—*P. aurea*, Nutt.; ramis laxis monocephalis, receptaculo plano, styli disci ramis subulatis.—G. Bentham.

Fig. 1. Female ray-floret. 2. Summit of its style. 3. Disk-floret. 4. Three of the stamens. 5. Summit of the style. 6. Seta of the pappus.

Plate 1102.

STACHYCEPHALUM MEXICANUM, *Sch. Bip.*

Compositæ, Tribe Helianthoideæ.

Stachycephalum, *Sch. Bip. gen. nov. Capitula* heterogama, radiata, flore radii 1 ♀ fertili, disci paucis ♂ sterilibus. *Involucrum* ovoideum, post anthesin vix mutatum, bracteis tenuiter membranaceis, una lata concava subcucullata, 2 v. 3 minoribus angustis tenuibus. Receptaculum parvum, nudum. *Corolla* ♀ ligulata, lamina exserta lata patente 3-dentata; ♂ regulares, tubo brevi, limbo late campanulato apice 5-lobo. *Antheræ* basi auriculis parvis acutis ecaudatis sagittatæ. *Stylus* fl. ♂ indivisus. *Achænium* radii ovoideum, compressiusculum, calvum, involucri bractea majore membranacea arcte inclusum, pericarpio crustaceo; achænia disci angusta, vacua. —Herba *glabra*. Folia *opposita, dentata*. Capitula *minima, numerosa, cymulosa, cymulis in paniculam trichotomam corymbosam dispositis*. Corollæ *flavæ*.

S. mexicanum, *Sch. Bip. sp. unica.*

Hab. Mexico, near Oaxaca, *Franco*. Described from a single specimen in the herbarium of the late Dr. Schultz-Bipontinus, now forming part of that of M. Cosson.

Herba erecta, trichotoma, glabra v. vix superne minutissime puberula, ramis tenuibus. *Folia* opposita, petiolata, ovato-lanceolata, acuminata, dentata, majora 2–3½-pollicaria, petiolo gracili ad caulem breviter dilatato. *Cymæ* terminales pedunculatæ, graciles, ramosissimæ, bracteis ramulos subtendentibus parvis squamæformibus. *Capitula* secus ramulos ultimos sessilia v. brevissime pedunculata. *Involucrum* vix linea longius. *Florum* ♀ lamina fere orbiculata, lineam diametro, patentissima v. reflexa.

The genus is nearly allied to *Milleria*, but differs too much in the involucre and general inflorescence to be united with it.—G. Bentham.

Figs. 1 and 2. Flower-head. 3. Female floret. 4. Summit of its style. 5. Achene. 6. Disk-floret. 7. Three of its stamens. 8. Sterile achene and style.

Plate 1103.

OLIVÆA TRICUSPIS, *Sch. Bip.*

Compositæ, Tribe Helenioideæ.

Olivæa, *Sch. Bip. gen. nov. Capitula* heterogama, radiata, floribus radii fœmineis 1-seriatis discique hermaphroditibus fertilibus. *Involucrum* late

hemisphæricum, bracteis 3–4-seriatis lanceolatis subherbaceis inæqualibus apice laxis. *Receptaculum* planum, nudum. *Corollæ* ♀ ligulatæ, lamina patente apice vix dentata; ☿ regulares, tubo glanduloso-hispido, limbo ampliato cylindraceo-campanulato, apice 5-fido. *Antheræ* basi obtusæ, ecaudatæ. *Styli* florum disci rami complanati, appendicibus lanceolatis hirtis superati. *Achænia* a latere plano-compressa, ovata, 2-alata, v. florum fœmineorum 3-alata; pappi setæ ad 10, breviter plumosæ, caducissimæ.—Herba? *foliis alternis integris* v. *dentatis*. Capitula *majuscula, terminalia*. Corollæ *flavæ*.

O. tricuspis, *Sch. Bip. mss.*

Hab. Near Guadalaxara, Mexico, *Schaffner*, n. 346; described from specimens in Herb. Cosson.

Herba videtur pedalis v. altior, verisimiliter paludosa, erecta, caule crassiusculo glabro v. superne leviter papilloso-pubescente. *Folia* sessilia, basi cordato-amplexicaulia, anguste lanceolata, integerrima v. basin versus paucidentata, et nonnulla apice 2-dentata v. breviter 3-fida, majora 2–2½ poll. longa, superiora minora, omnia glabra utrinque viridia et 1-nervia. *Capitula* ad apices ramorum solitaria, breviter pedunculata. *Involucrum* ¾ poll. diametro; bracteæ anguste lanceolatæ, exteriores herbaceæ disco æquilongæ v. hinc inde elongatæ, interiores magis scariosæ leviter papilloso-puberulæ. *Flores* radii circa 30, ligulis semipollicaribus, disci numerosissimi, omnes ut videtur flavi. *Achænia* glabra.—G. Bentham.

Fig. 1. Female flower with the young achene. 2. Its style. 3. A bristle of the pappus. 4. Hermaphrodite flower with the achene nearly ripe. 5. Three of the stamens. 6. Summit of the style.

Plate 1104.

CLAPPIA AURANTIACA, *Benth.*

Compositæ, Tribe Helenioideæ.

C. aurantiaca, *Benth. sp. nov.;* foliis pinnatisectis, segmentis 5–7 ovatis acutis serratis, involucri bracteis ∞-seriatis angustis, pappi paleis 1-seriatis fere ad basin in setas ∞ fissis.

Hab. Fields of Antigua, prov. Vera Cruz, Mexico, *Galeotti*, n. 2270; described from a single specimen in the State Herbarium, Brussels.

Herba ex cl. Galeotti annua, glabra, ramosa, ut videtur ultrapedalis. *Folia* alterna, segmentis oppositis cum impari, secus rhachin distantibus, sessilibus v. paris infimi petiolulatis, ovatis v. ovato-lanceolatis acutis arguteque serratis

½–1-pollicaribus, utrinque viridibus haud tamen glandulosis, petiolo communi (cum rhachi) ¾–1 poll. longo, basi ciliis paucis longis more *Pectidis* aucto. *Capitula* majuscula, solitaria, longiuscule pedunculata. *Involucri* bracteæ pluriseriatæ, numerosæ, lineari-lanceolatæ, acuminatæ, interiores 6–7 lin. longæ, exteriores gradatim breviores. *Receptaculum* convexiusculum, setis longis inter flores onustum. *Flores radii* uniseriati fœminei 15–20; corollæ tubo gracili involucro paullo breviore, lamina patente late oblonga integra semipollicari. *Flores disci* numerosi, ut videtur fertiles; corollæ involucro paullo longiores, limbi lobis linèaribus erectis lineam longis. *Antheræ* corolla breviores. *Achænia* immatura lineari-cuneata, obscure 10-costata; pappi paleæ circa 10, in setas plurimas inæquales fissæ, centralibus cujusvis paleæ corollam subæquantibus.—G. Bentham.

Fig. 1. Floret of the ray. 2. Summit of its style. 3. Floret of the disk. 4. Three of its anthers. 5. Summit of its style. 6. Palea of the pappus. 7. Section of the receptacle. 8. Two of its setæ.

Plate 1105.

CLAPPIA SUÆDÆFOLIA, *Torr.*

Compositæ, Tribe Helenioideæ.

C. suædæfolia, *A. Gr. in Torr. Bot. Emory Exped.* 93; foliis anguste linearibus carnosulis integris v. pinnatim 3–5-sectis, involucri bracteis pauciseriatis latiusculis, pappi setis indivisis basi rigidulis inæqualibus barbellatis.

Hab. Laredo, on the lower Rio Grande, Texas, *Berlandier.*

Herba e basi perenni ramosa, subpedalis, carnosula, glabra. *Folia* alterna, in parte inferiore caulis conferta, nonnulla pinnatim 3–5-secta, segmentis foliisque cæteris subteretibus carnosulis parce glanduloso-punctatis ½–1-pollicaribus, superiora parva distantia. *Capitula* ad apices ramorum pedunculata, pedunculo sub involucro parum incrassato. *Involucri* bracteæ pauciseriatæ, latiusculæ, obtusæ, subglanduloso-striatæ, exteriores breviores. *Receptaculum* convexum, setis rigidulis achænio æqualibus longioribusve inter flores onustum. *Flores radii* circa 15, lamina quam in *C. aurantiaca* angustiore. *Flores disci* numerosi, fertiles. *Achænia* immatura oblonga, obscure 6–10-costata, hirtella, pappi setis (15–20?) rigidis subpaleaceis barbellatis inæqualibus, plus minus complanatis at inter se liberis.

The original specimens described by A. Gray were in a very imperfect state, and the pinnatipartite lower leaves either had fallen away or were overlooked. The specimens in the Kew herbarium are rather better, but yet

the flowers are so rotten that it is possible that some slight errors may have crept into the character given. The genus certainly connects the *Helenioideæ Tagetineæ* with the *Senecionideæ* but appears to be most nearly allied to the former, notwithstanding the exceptional setæ of the receptacle.—G. BENTHAM.

Fig. 1. Involucre and receptacle, longitudinal section. 2. Ray-floret. 3. Summit of its style. 4. Disk-floret, with an enlarged seta of the pappus. 5. Three of the stamens. 6. Summit of its style. 7. Unripe achene.

PLATE 1106.

BRACHYACTIS MENTHODORA, *Benth.*

COMPOSITÆ, Tribe ASTEROIDEÆ.

B. menthodora, *Benth. sp. nov.;* glanduloso-pubescens, caule e basi perenni erecto elato, foliis ovatis oblongisve dentatis, inferioribus longe petiolatis, superioribus angustis sessilibus, plerisque basi amplexicaulibus, receptaculo plano, ligulis stylo suo longioribus.

HAB. Sikkim Himalaya, at an elevation of 10,000 to 13,000 ft. The whole plant has a strong, sweet, mint-like scent.

Caules 1–2-pedales, parum ramosi, demum glabrescentes. *Folia* radicalia lata, in petiolum longum tenuem contracta; caulina inferiora brevius petiolata, superiora 1–2-pollicaria, prope basin contracta, ima basi sæpe amplexicauli-dilatata et interdum breviter decurrentia. *Capitula* magnitudine eorum *B. ciliatæ*, in axillis superioribus breviter pedunculata, solitaria v. pauca conferta, ad apices caulis ramorumque primariorum plurima conferta. *Involucri* bracteæ 3–4 lin. longæ, 2–3-seriatæ, parum inæquales, herbaceæ, interiores margine scariosæ, una alterave exteriorum interdum magis foliacea et capitulo longiore. *Receptaculum* haud foveolatum. *Corollæ* fl. ♀ sub-2-seriatæ, ligulis angustissimis pallide cærulescentibus stylo suo longioribus, pappum vero vix superantibus. *Corollæ* fl ♂ disci tubo tenui, limbo breviter campanulato. *Styli* rami omnino Asteroidearum, angusti, complanati, appendicibus lanceolatis terminati. *Achænia* anguste obovato-oblonga, plano-compressa, basi contracta, apice rotundata, margine nerviformi cincta, faciebus ecostatis pilosis. *Pappus* sordidus, achænio parum longior.

Fig. 1. Involucre and receptacle, longitudinal section. 2. Ray-floret. 3. Summit of its style. 4. Disk-floret. 5. Three of its stamens. 6. Summit of its style. 7. A seta of the pappus.

Closely allied as this species is to several genera of *Asteroideæ* there was some difficulty in fixing upon the one to which it should be referred, but upon the whole it appeared the nearest allied to *Brachyactis*, of which it has

the inflorescence, and from which it only differs in the rather more developed ligulæ of the ray-florets. The typical *B. ciliata* of Ledebour, originally published by him as an *Erigeron*, referred by De Candolle to *Conyza*, included in *Aster* by Torrey and Gray, has now been referred back to *Erigeron* by Russian botanists, and is certainly technically connected with all three, especially with *Erigeron* and *Conyza*. Unless, however, the three genera, together with six or seven of their allies, are united into one overgrown genus, which even then would not be very distinctly limited, it appears necessary to keep up *Brachyactis*, which with most of the characters and nearly the habit of *Lachnophyllum* has not the involucre of that genus, and differs from *Erigeron* in the small ligulæ, leafy stems, short peduncles, etc., from *Conyza* in the ligulate female florets and habit. The following are the species I should refer to *Brachyactis* :—

1. *B. ciliata*, Ledeb. Fl. Ross. ii. 495 ; annua, ramosissima, glabrescens, foliis linearibus integris, receptaculo leviter foveolato, ligulis stylo suo brevioribus v. minimis.—*Erigeron ciliatus*, Ledeb. Fl. Alt. iv. 92 ; Ic. Fl. Ross. t. 100. *Conyza altaica*, DC. Prod. v. 380. *Crinitaria humilis*, Hook. Fl. Bor. Amer. ii. 24. *Tripolium angustum*, Lindl. in Hook. Fl. Bor. Amer. ii. 15. *Aster angustus*, Torr. et Gr. Fl. N. Amer. ii. 162.

Hab. Altai and Alatau mountains, and Songaria, *Ledebour*, *Karelin* and *Kiriloff*, *Schrenck*, and others; on the Saskatchawan and towards the Rocky Mountains, *Drummond*, *Richardson*, *Bourgeau*.

Var. *carnosula ;* foliis carnosulis, involucri bracteis obtusioribus.

Hab. New Mexico, *Wright*, n. 1161 ; Sonora Pass, *Bolander*, n. 6160.

2. *B. umbrosa* ; annua ? glanduloso-villosa, caule gracili ramoso, foliis obovatis cuneatisve dentatis in petiolum longiusculum contractis, receptaculo plano, ligulis minimis.—*Conyza umbrosa*, Karel. et Kir. in Ledeb. Fl. Ross. ii. 498.

Hab. Alatau Mountains, *Karelin and Kiriloff*, also *Semenov*, from specimens sent from St. Petersburg under the name of *B. ciliata*, perhaps from the misplacement of a label ; Western Thibet, *T. Thomson*, *Stewart ;* Lahul, *Jæschke*, 2nd coll. n. 71.

Caules erecti v. adscendentes, ramosi, tenues, $\frac{1}{2}$–1-pedales. Folia tenuia, grosse dentata. Inflorescentia et flores fere *B. ciliatæ*, capitula tamen minora et pappus minus copiosus. Ligulæ ovatæ v. oblongæ, stylo multo breviores, sæpe pilosulæ.

3. *B. robusta*, sp. nov.; annua ? glanduloso-pubescens, caule valido erecto ramoso, foliis obovatis dentatis in petiolum brevem contractis, receptaculo lato foveolato, ligulis minimis.

Hab. Thibet, *T. Thomson ;* Gurwhal, *M. P. Edgeworth ;* Kamaon, *Strachey and Winterbottom*, *Falconer*.

4. *B. umbrosæ* affinis, sed multo major, capitulis duplo majoribus et receptaculo insigniter foveolato facile distincta.

B. obovata, sp. nov. ; villosa, caulibus e basi perenni adscendentibus oligocephalis, foliis obovatis subdentatis basi angustatis subpetiolatis, ligulis minimis.

Hab. Mesopotamia or Kurdistan, *Kotschy*, n. 546*a*.

Caules vix semipedales. *Folia* infima conferta subradicalia ultrapollicaria, caulina minora petiolo basi non dilatata. *Capitula* fere *B. ciliatæ* sed achænia ut in *B. menthodora* multo majora fere *Vittadiniæ*, pappo rigidiore. Primo intuitu *Erigeronti persico*, Boiss. subsimilis, sed caule foliato involucro achæniisque facile distincta.

5. *B. menthodora*, uti supra.—G. Bentham.

Plate 1107.

LACHNOPHYLLUM NOEANUM, *Boiss.*

Compositæ, Tribe Asteroideæ.

L. noeanum, *Boiss. Diagn. Pl. Or. ser.* 2. iii. 17 ; molliter villosum et glanduloso-viscidum, caule robusto, ramis pleiocephalis, foliis oblongis v. oblongo-spathulatis integris.

Hab. In the Alps of Kurdistan, *Noé*, n. 571 ; in the valley of Nanderbent, near Kermanschah, *Haussknecht ;* Mount Bimgoell, between Musch and Erzerum, *Kotschy It. Cilic. Suppl.* n. 828.

Radix annua videtur, etsi dura. *Caules* erecti, validi, 1–1½-pedales, additis e basi pluribus tenuioribus adscendentibus brevibusque. *Tota planta* pilis longis mollibus et pube glanduloso-viscida vestita. *Folia* radicalia et ima conferta, oblongo-spathulata, basi longe contracta at vix petiolata, pollicaria, caulina oblonga infra medium dilatata et auriculis rotundatis cordato-amplexicaulia, summa parva. *Capitula* ad apices ramulorum brevium breviter pedunculata v. in caule primario laxius irregulariterque corymboso-paniculata, pedunculis longioribus. *Involucrum* campanulatum, bracteis pluriseriatis angustis acutis, interioribus 4–5 lin. longis margine scariosis, exterioribus gradatim brevioribus dorso hirtis. *Flores radii* sub-2-seriati, ligulis vix 2 lin. longis, disci numerosi involucrum vix æquantes. *Achænia* 1 lin. longa, compressa at crassiuscula, nervo marginata, sericeo-villosula, apice sub pappo brevissime contracta. *Pappi* setæ copiosæ, inæquales, basi annulo persistenti affixæ at sigillatim caducæ.

The typical *L. gossypinum*, Bunge, differs from this species in its slender habit, small broad short leaves, and slender single-headed branches. Further discoveries may, however, possibly connect the two forms. Our drawing was made from Haussknecht's specimens, which although distributed under the name of *Erigeron flagellare*, Boiss. et Hausskn., I readily recognised as a *Lachnophyllum*, and on communicating with M. Boissier I learnt from him that he did not doubt its identity with his *L. Noeanum*, although he had mislaid his specimens of the latter. I have since found in the Hookerian herbarium specimens from Noé, much more perfect than those drawn, showing the primary stems with a loose inflorescence, which are wanting in Haussknecht's, and bearing also some ripe achenes.—G. Bentham.

Fig. 1. Involucre and receptacle, longitudinal section. 2. Ray-floret. 3. Summit of its style. 4. Setæ of its pappus. 5. Disk-floret. 6. Three of its stamens. 7. Summit of its style.

Plate 1108.

FRESENIA FASCICULATA, *Bolus.*

Compositæ, Tribe Asteroideæ.

F. fasciculata, *Bol. sp. nov.;* foliis lineari-semiteretibus carnosulis glabris ad axillas fasciculatis.

Hab. South Africa; in rocky places at Poortje on the Sneeuwberg, between Graaff-Reinet and Murraysburg, fl. December, *H. Bolus.*

Suffrutex 2–3-pedalis, parce ramosus, undique glaber. *Folia* dense fasciculata, obtusa, mucronulata, lævia, pellucido-punctata, 6–9 lin. longa, ½ lin. lata. *Capitula* e foliorum fasciculis solitaria, pedunculata, pedunculo 2-pollicari infra medium 1-bracteato. *Involucrum* oblongum, bracteis 4-seriatis linearibus membranaceis, costa viridi apice in glandulam lucidam producta, apice sphacelata ciliolataque. *Flores* flavi, involucri bracteis dimidio longiores. *Achænia* obovato-oblonga, pilis purpurascentibus subhyalinis sericeo-villosa.—H. Bolus.

Figs. 1 and 2. Leaves. 3. Involucre and receptacle, longitudinal section. 4. Floret. 5. Three of the stamens. 6. Summit of the style. 7. Seta of the pappus.

Plate 1109.

ANAGLYPHA ACICULARIS, *Benth.*

Compositæ, Tribe Inuloideæ Relhanieæ.

Anaglypha, *DC?* *Capitula* heterogama, radiata, floribus radii fœmineis 1-seriatis discique hermaphroditis fertilibus. *Involucrum* late campanulatum, bracteis pauciseriatis imbricatis acutis interioribus lanceolatis margine scariosis exterioribus lineari-subulatis brevioribus. *Receptaculum* planum, nudum. *Corollæ* fœmineæ ligulatæ, lamina patente apice minute 3-dentata, disci regulares, tubulosæ, limbo ampliato semi-5-fido. *Antheræ* basi sagittatæ, auriculis contiguis connatis setaceo-caudatis. *Styli* florum disci rami apice truncati. *Achænia* (immatura) subteretia, 5-costata, glabra, calva.—Frutex, *foliis confertis acicularibus.* Capitula *ad apices ramorum solitaria, pedunculata.* Corollæ *aurantiacæ.*

A. acicularis, *Benth. sp. nov.!* foliis acicularibus rectis.

Hab. South Africa, Cape Colony, district George, between Cloet's kraal and Paarde-kraal, *Burchell,* n. 5159.

Frutex pedalis, caulibus pluribus erectis stricte ramosis, ramulis glutinoso-puberulis foliisque pilis brevibus rigidulis conspersis. *Folia* alterna, conferta, acicularia, lineari-semiteretia, acutissima, ½-1 poll. longa, demum reflexa. *Capitula* ad apices ramorum solitaria, pedunculo brevi fulta. *Involucri* bracteæ interiores latiuscule lanceolatæ, breviter subulato-acuminatæ, margine scarioso-ciliolatæ, circa 3 lin. longæ, intermediæ angustiores, exteriores paucæ breviores subulatæ. *Flores* radii ad 8, lamina fere 3 lin. longa, tubo hirtello brevi. *Corollæ* disci involucro subæquilongæ.

The genus is allied to *Nestlera*, and has the habit of some species of that genus, but a very different involucre and no pappus. It had been placed by De Candolle under *Asteroideæ* with appendiculate style-branches and tailless anthers, and Harvey had not seen it. I therefore failed to recognize it, and had it figured as new under the name of *Oxylæna*. But having since observed that De Candolle had seen neither the styles nor the anthers of his *Anaglypha*, and the other characters agreeing with our plant, I have now little doubt but that it is a congener, and possibly a variety only of De Candolle's species with narrower more acicular leaves.—G. Bentham.

Fig. 1. Leaf. 2. Involucre and receptacle, longitudinal section. 3. Ray-floret. 4. Summit of its style. 5. Disk-floret. 6. Three of its stamens. 7. Summit of its style.

Plate 1110.

HOMOCHÆTE CONFERTA, *Benth.*

Compositæ, Tribe Inuloideæ Euinuleæ.

Homochæte, *Benth. gen. nov.* *Capitula* heterogama, radiata, floribus radii fœmineis 1-seriatis discique hermaphroditis fertilibus. *Involucrum*

ovoideum, cylindraceum, bracteis pluriseriatis imbricatis siccis subcoriaceis, interioribus angustis elongatis, exterioribus gradatim brevioribus. *Receptaculum* planum, nudum v. leviter foveolatum. *Corollæ* fœmineæ ligulatæ, tubo longo, lamina patente subintegra; disci regulares, tubulosæ, limbo parum ampliato apice 5-fido. *Antheræ* basi sagittatæ, auriculis contiguis connatis longe setaceo-caudatis. *Styli* florum disci rami lineares, apice rotundati v. obtusissimi, exappendiculati. *Achænia* oblongo-subteretia, papilloso-pubescentia, 6–10-costata; pappi setæ 1-seriatæ, rigidulæ, subæquales, brevissime ciliato-barbellatæ, basi in annulum deciduum plus minus connatæ.—Frutex *dense foliatus, glanduloso-pubescens.* Folia *alterna, conferta, linearia, integerrima.* Capitula *terminalia, solitaria, sessilia.* Corollæ *verisimiliter flavæ.*

H. conferta, *Benth. sp. unica.*

Hab. South Africa; Taku's territory, British Caffraria, *Sutherland.*

Frutex undique pilis brevibus rigidulis sordide glanduloso-pubescens. *Folia* conferta, linearia, obtusa, crassiuscula, marginibus revolutis, 5–8 lin. longa. *Capitula* inter folia superiora sessilia et ea vix v. non superantia. *Involucrum* semipollicare, bracteis præsertim exterioribus obtusis apice glutinoso-marginatis. *Corollarum* radii laminæ circa 3 lin. longæ.

The genus is nearly allied to *Inula*, but differs in inflorescence, involucre and pappus, besides its geographical station.—G. Bentham.

Figs. 1 and 2. Leaves. 3. Capitulum. 4. Involucre and receptacle, longitudinal section. 5. Ray-floret. 6. Summit of its style. 7. Seta of the pappus. 8. Disk-floret. 9. Three of its stamens. 10. Summit of its style.

Plate 1111.

CALOSTEPHANE DIVARICATA, *Benth.*

Compositæ, Tribe Inuloideæ Euinuleæ.

Calostephane, *Benth. gen. nov. Capitula* heterogama, radiata, floribus radii fœmineis 1-seriatis discique hermaphroditis fertilibus. *Involucrum* subhemisphæricum, bracteis subbiseriatis parum inæqualibus herbaceis lineari-subulatis acutissimis. *Receptaculum* convexiusculum, foveolatum. *Corollæ* radii ligulatæ, lamina patente 3-dentata; disci regulares, tubulosæ, limbo parum ampliato apice 5-fido. *Antheræ* basi sagittatæ, auriculis contiguis connatis acuminato-caudatis. *Styli* florum disci rami longe lineares, acuti, rigidi, stigmatum seriebus ante apicem evanidis vix tamen appendiculati. *Achænia* oblonga, subteretia, 10-costata, villosula, exteriora

curvata; pappi paleæ 5, latæ, hyalinæ, denticulatæ, cum setis totidem paleaceis interioribus paullo longioribus serrato-barbellatis alternantes.—Herba, *ramis rigidis alatis*. Folia *alterna*, *petiolata*, *subdentata*. Capitula *pedunculata*. Corollæ *flavæ*.

C. divaricata, *Benth. sp. unica.*

Hab. South-East Africa; Caimbo Island, opposite Tete, *Kirk.*

Caules herbacei, in speciminibus nostris 1½-pedales, ramis paucis divaricatis rigidulis alis 2–3 angustis herbaceis a foliis decurrentibus percursis, parce puberulis glabratisve. *Folia* pauca, distantia, petiolata, ovato-lanceolata v. lanceolata, integra v. parce dentata, 1–2-pollicaria, summa parva, angusta. *Capitula* ad apices ramorum pedunculata, solitaria v. laxe irregulariterque corymbosa. *Involucri* bracteæ 2–3 lin. longæ, rigidulæ, dorso hirtellæ. *Florum* radii ligulæ latiusculæ, 2 lin. longæ. *Corollæ* disci involucro æquilongæ, extus hirtellæ. *Pappus* maturitate eleganter patens, paleis exterioribus late cuneatis interioribus (v. setis) rigidioribus medio parum dilatatis.

Although technically allied to *Pulicaria* the plant differs too much in habit and in the pappus to be included within that genus, the style-branches are also much more acute than in the *Euinuleæ* generally.—G. Bentham.

Fig. 1. Involucre and receptacle, longitudinal section. 2. Ray-floret. 3. Summit of its style. 4. Disk-floret. 5. Three of its stamens. 6. Summit of its style. 7. Young achene. 8. Ripe achene, with the pappus spreading. 9. Outer paleæ. 10. Inner paleæ or setæ of the pappus.

Plate 1112.

ONDETIA LINEARIS, *Benth.*

Compositæ, Tribe Inuloideæ Buphthalmeæ.

Ondetia, *Benth. gen. nov.* *Capitula* heterogama, radiata, floribus radii fœmineis discique hermaphroditis fertilibus (v. internis sterilibus?). *Involucrum* subhemisphæricum v. depresso-globosum, bracteis pluriseriatis imbricatis appendicibus amplis laxis scariosis terminatis, intimis acutis, exterioribus gradatim brevioribus latisque. *Receptaculum* planum v. convexiusculum, paleis rigide scariosis acutis flores subtendentibus onustum. *Corollæ* radii ligulatæ, lamina patente subdentata; disci regulares, tubo brevi, limbo longo cylindraceo rigidulo ad medium v. profundius 5-fido. *Antheræ* basi sagittatæ, auriculis longiusculis contiguis connatis, appendiculis planis ciliolatis caudatis. *Styli* florum disci rami longiusculi, linear-

lanceolati, rigidi, obtusi, dorso hirtelli, inappendiculati. *Achænia* (immatura) teretia, pilosa; pappi paleæ subbiseriatæ inæquales, in setas breviter barbellatas desinentes.

O. linearis, *Benth. sp. unica.*

Hab. South Africa; at Elephantskloof in Dammara Land, called 'Ondetu' by the Dammaras, and made into a perfume by them and by the Namaquas, *Chapman and Baines.*

Herba pilis minutis sparsis glanduloso-scabra, caulibus e basi ut videtur perenni pluribus rigidulis ramosis angustissime alatis infrapedalibus. *Folia* linearia, acuta v. mucronulata, integerrima v. parce dentata, 1–2-pollicaria. *Capitula* terminalia, inter folia suprema cæteris paullo minora sessilia. *Involucrum* semipollicem diametro, id *Centaureæ* cujusdam simulans. *Bracteæ* numerosæ, basi breviter appressæ imbricatæque, appendicibus latis scariosis medio fuscis margine pallidis, intimis mucronato-acutis, extimis obtusis. —G. Bentham.

Plate 1113.

LOPHOLÆNA PLATYPHYLLA, *Benth.*

Compositæ, Tribe Senecionideæ.

L. platyphylla, *Benth. sp. nov.*; foliis amplis late obovatis in petiolum contractis, involucri bracteis exterioribus late foliaceo-decurrentibus, pedunculis monocephalis.

Hab. South Africa; in the highlands of Natal and Zulu, 'the leaves resembling those of a cabbage,' *Gerrard and M'Ken*, n. 2023 (*Herb. Kew from Herb. Trin. Coll. Dublin*).

Frutex 6–8-pedalis, glaberrimus, glaucescens. *Folia* alterna, iis *Brassicæ sativæ* subsimilia, 4–6-pollicaria, carnosula (interdum latiora quam in icone depicta), in petiolum decurrentia. *Pedunculi* foliis breviores, bracteis decurrentibus alati. *Involucrum* late cylindraceum, semipollicare; bracteæ interiores oblongo-lineares, erectæ, 1-seriatæ, æquales, primum subcohærentes, margine soluto subscariosæ; exteriores 2–3, ample foliaceæ, capitulum subsuperantes, basi angustatæ et in pedunculum decurrentes. *Flores* involucrum breviter superantes, structura omnino ei *L. Dregeanæ*, DC., conformes videntur.—G. Bentham.

Fig. 1. Bract of the involucre and floret. 2. Three of its stamens. 3. Summit of its style. 4. Seta of the pappus.

Plate 1114.

SENECIO RETORTUS, *Benth.*

Compositæ, Tribe Senecionideæ.

S. (§ Pinifolii, Harv) **retortus,** *Benth.*; fruticosa, glabra, foliis crebris parvis linearibus mucronatis recurvo-patentissimis, capitulis ad apices ramorum intra folia ultima sessilibus solitariis radiatis.—*Felicia retorta*, DC. Prod. v. 221. *Aster retortus*, Harv. Fl. Cap. iii. 77.

Hab. South Africa; Genadendal, on the descent from the great mountain of Baviaan's kloof, *Burchell*, n. 7393.

Frutex glaberrimus, ericoideus, ramis virgatis dense foliatis. *Folia* sparsa, conferta, a basi patente reflexa, coriacea, nitidula, marginibus revolutis, vix ultra 2 lin. longa, sessilia basique subdecurrentia, summa ad basin involucri parva, bracteas exteriores simulantia. *Involucri* bracteæ 1-seriatæ, angustæ, 3–4 lin. longæ. *Flores* radii ut videtur flavi, lamina patente circa 3 lin. longa. *Antheræ, stylus et achænia* omnino *Senecionis* nec *Asteris*.

By some singular mistake this plant was entered by De Candolle under *Felicia*, although he had observed the discrepancy in the achenes. He does not appear to have examined the styles. Burchell had entered it as a *Senecio*. Harvey saw no specimens, and could therefore only leave it where De Candolle had placed it.—G. Bentham.

Plate 1115.

LEUCOPHOLIS PHYLICOIDES, *Gardn.*

Compositæ, Tribe Inuloideæ Gnaphalieæ.

L. phylicoides, *Gardn. in Hook. Lond. Journ.* ii. 11; ramulis apicem versus breviter lanuginosis, foliis linearibus subtus cano-tomentosis, capitulis sub-10-floris.

Hab. Brazil; sphagnum bog near the summit of the Organ Mountains, *Gardner*, n. 5772, also *Glaziou*, n. 2854 and 3692.

Frutex bipedalis. *Rami* teretes, dichotomi, dense foliosi et lanuginoso-tomentosi. *Folia* confertissima, alterna, sessilia, oblonga, obtusa (v. mucrone calloso terminata), 3–5 lin. longa, 1–1½ lin. lata, deflexa, margine revoluta, supra glabra, subtus cano-tomentosa. *Capitula* sub-10-flora, homogama, ad apices ramorum in glomerulum subglobosum aggregata, subsessilia. *Involucrum* laxe imbricatum, bracteis pluriseriatis subæqualibus lineari-lanceolatis acuminatis membranaceis (scariosis) glabris albidis. *Receptaculum* angustum, nudum. *Corollæ* lilacinæ, glabræ, tubulosæ, 1½ lin. longæ, regulariter 5-fidæ, lobis brevibus lanceolatis. *Filamenta* complanata, glabra. *Antheræ* vix exsertæ, basi bisetosæ, apice appendice lanceolata terminatæ. *Pollen* globosum, læve. *Stylus* glaber, basi bulbosus; rami breves, divaricati, truncati, hispidi. *Achænium* oblongum, dense villosum; pappus uniserialis, multisetosus, setis scabris corolla longioribus (*Gardner*, *l. c.*).

We have received from M. Glaziou the following second species of this interesting genus, also from the province of Rio de Janeiro, with n. 4841.

L. latifolia, *Benth. sp. nov.*; foliis lanceolatis subtus ramoque longe denseque niveo-lanatis, capitulis sub-4-floris. Habitus et folia reflexa *L. phylicoidis*, sed lana multo longior copiosiorque, folia ½–1 poll. longa, 2–3 lin. lata, capitula minora paucifolia et involucra pallide brunnea, nec nivea.—G. Bentham.

Plate 1116.

DESMANTHODIUM PERFOLIATUM, *Benth.*

Compositæ, Tribe Helianthoideæ.

Desmanthodium, *Benth. gen. nov.* *Capitula* heterogama, discoidea, floribus fœmineis 1–3 fertilibus, hermaphroditis paucis (4–6) sterilibus. *Involucrum* ovoideum, bracteis paucis (3–5) ovatis obtusis membranaceis, intimis (seu receptaculi paleis extimis) lageniformibus membranaceis a dorso compressis clausis, flores fœmineos includentibus. *Receptaculum* parvum, planum, sub floribus hermaphroditis nudum v. hinc inde palea angusta instructum. *Corollæ* florum fœmineorum tenues, stylo breviores, in limbum brevissimum truncatum v. 2–3-dentatum patentem apice dilatatæ; florum hermaphroditorum regulares, tubo brevi, limbo cylindraceo apice 5-fido hirsuto. *Antheræ* basi obtusæ. *Stylus* florum hermaphroditorum indivisus, hirtus. *Achænia* florum fœmineorum bractea omnino inclusa, obovali-oblonga, a dorso plano-compressa, calva, glabra, corolla persistente apice e bractea

exserta v. inclusa quasi rostrata.—Herbæ *elatæ*, *glabræ v. scabro-puberulæ*. Folia *opposita*, *subserrata*. Capitula *parva*, *in glomerulis capituliformibus pauca sessilia*, *glomerulis corymboso-paniculatis*.

D. perfoliatum, *Benth. sp. nov.*; foliis ovato-lanceolatis basi auriculato-dilatatis connatis, capitulorum glomerulis numerosis late corymboso-paniculatis.

Hab. Mexico; in the province of Oaxaca, at an elevation of 4500 feet, *Galeotti*, n. 2050.

Herba fide Galeotti perennis, erecta, elata, glaberrima v. ramis paniculæ linea decurrente pilorum pubescentibus. *Folia* inferiora desunt, superiora ovato-lanceolata acuminata parce serrata infra medium contracta, basi dilatata et auriculis latis connata, utrinque viridia, supra nitidula, 3–5 poll. longa, triplinervia, summa minora. *Capitulorum* glomeruli depresso-globosi, circa 3 lin. diametro, in panicula lata trichotoma numerosissimi. *Capitula* in glomerulo 6–10, $1\frac{1}{2}$ lin. longa. *Flores* fœminei in capitulo 1–2, hermaphroditi steriles ad 4.

Fig. 1. Cluster of flowerheads. 2. Female floret enclosed in the bract. 3. Female floret without the bract. 4. Disk-floret. 5. One of its stamens. 6. Summit of its style.

The following second species of the genus is in Herb. Hook., the specimens not very good as to the flowers, but sufficient to show the same structure as in *D. perfoliatum*.

D. ovatum, *Benth. sp. nov.*; foliis breviter petiolatis late ovatis, capitulorum glomerulis paucis subcorymbosis.

Hab. Mexico: woods of the province of Oaxaca at an elevation of 7000 to 8000 feet, *Galeotti*, n. 2081; on the mountain San Felipe, *Andrieux*, n. 319.

Herba fide Galeotti annua, erecta, elata, parum ramosa, caule glabro. *Folia* late ovata, irregulariter serrato-crenata, $1\frac{1}{2}$–3-pollicaria, basi in petiolum brevem ad caulem haud dilatatum contracta, 3–5-tuplinervia, supra pilis minutis sparsis scabra, subtus pallidiora glabra. *Capitulorum* glomeruli in speciminibus 3, ad apicem pedunculi longi pedicellati, subglobosi, 3 lin. diametro. *Capitula* in glomerulo 6–8. Involucri *bracteæ* striatæ.—G. Bentham.

Plate 1117.

AGANIPPEA BELLIDIFLORA, *DC.*

Compositæ, Tribe Helianthoideæ.

A. bellidiflora, *DC. Prod.* vi. 3; caule hirsuto, foliis longe lanceolatis parce dentatis subglabris.—*Heliogenes longifolia*, Benth. Pl. Hartw. 42.

Hab. Mexico, in marshes near the town, *Berlandier;* near Regla, *Hartweg.*

Caules e basi reptante radicanteque ascendentes v. erecti, 1–1½-pedales, simplices v. ramosi, crassiusculi, pilis hyalinis laxe hirsuti. *Folia* opposita sessilia, longe lanceolata, integerrima v. remote dentata, basi latiora et cordato-amplexicaulia, 2–3-pollicaria, 3–7-nervia, glabra v. subtus ad nervos leviter pilosa. *Pedunculi* in axillis alterni, 1-cephali, foliis paullo longiores. *Involucri* hemisphærici bracteæ sub-7-seriatæ, subæquales, herbaceæ, in parte inferiore marginibus intus plicatis achænia radii arcte includentes, 3–4 lin. longæ. *Receptaculum* conicum, paleis membranaceis acutis complicatis flores disci amplectentibus onustum. *Corollæ* radii ligulatæ, lamina supra achænium subsessili patente integra persistente; disci tubulosæ, limbo ampliato cylindraceo-campanulato apice 5-fido. *Antheræ* basi obtusæ. *Styli* florum disci rami elongati, lineares, obtusiusculi, exappendiculati. *Achænia* obovato-oblonga, calva, radii leviter a dorso compressa, disci subtetragona vacua (v. interdum forte perfecta?).—G. Bentham.

Fig. 1. Involucre and receptacle, longitudinal section. 2. Ray-floret, with the bract of the involucre enclosing it at the base. 3. Summit of its style. 4. Disk-floret, with the subtending palea of the receptacle. 5. Three of its stamens.

Plate 1118.

AXINIPHYLLUM CORYMBOSUM, *Benth.*

Compositæ, Tribe Helianthoideæ.

A iniphyllum, *Benth. gen. nov.* *Capitula* homogama, discoidea, floribus omnibus hermaphroditis fertilibus. *Involucrum* campanulatum, bracteis sub-2-seriatis parum inæqualibus herbaceis glanduloso-hispidulis. *Receptaculum* subplanum, paleis complicatis flores amplectentibus onustum. *Corollæ*

tubo brevi, limbo elongato cylindraceo apice 5-fido. *Antheræ* basi auriculis brevibus obtusis sagittatæ. *Styli* rami elongati, hirtelli, in appendices acutas desinentes. *Achænia* 4-gona, leviter incurva, apice subtruncata, calva, disco epigyno parvo.—Herbæ *superne viscidulæ, scabro-pubescentes v. tomentosæ.* Folia *opposita, hastato-3-loba.* Capitula *ad apices ramorum pauca v. corymboso-paniculata.* Achænia *glabra.*

1. **A. corymbosum,** *Benth. sp. nov.;* foliis profunde 3-lobis, lobis ovatis sublobatis subtus inter venas hirsutas glabris, capitulis parvulis irregulariter corymbosis.

Hab. Mexico; woods in the province of Oaxaca, at an elevation of 7500 feet, *Galeotti*, n. 2089.

Herba ex Galeotti annua, erecta, parum ramosa, 1–2-pedalis, pilis brevibus rigidulis scabro-pubescens, in panicula pube glandulosa intermixtis. *Folia* circumscriptione late deltoidea, subbipollicaria, acuta, denticulata et profunde 3-loba, lobis ovato-deltoideis basi sæpe utrinque lobo parvo auctis, intermedio lateralibus duplo majore, supra scaberrima, petiolis 1½–2-pollicaribus alatis basi auriculato-dilatatis connatisque; folia superiora parva, distantia; in panicula bracteæformia, sessilia, oblongo-lanceolata. *Paniculæ* rami primarii elongati, ultimi v. pedunculi breves. *Involucri* bracteæ 1–2-seriatæ, 2–2½ lin. longæ. *Corollæ* ex Galeotti roseo-flavicantes, involucrum subæquantes, extus hispidulæ. *Achænia* matura desunt.

Fig. 1. Floret with the subtending palea. 2. Three of its stamens. 3. Summit of the style.

The following is a second unpublished species of the genus:—

2. **A. tomentosum,** *Benth. sp. nov.;* foliis hastato-trilobis lobis late lanceolatis indivisis subtus dense tomentosis, capitulis majusculis paucis.

Hab. Mexico, *Bates* in Herb. Hook.

Statura A. corymbosi et pariter superne glanduloso-pubescens. *Folia* crassiora, brevius petiolata, lobis angustioribus haud divisis, supra scaberrima, subtus tomento denso canescentia, petiolis ut in *A. corymboso* alatis basi connatis; summa indivisa, subsessilia, lanceolata, pollicaria. *Capitula* in specimine 2 tantum, quam in *A. corymboso* duplo majora. *Involucri* bracteæ 4–7 lin. longæ, lineares, foliaceæ, glanduloso-pubescentes et hispidæ. *Receptaculi* paleæ rigidæ, acutissimæ, rubentes, nitidæ.

The genus is in many respects allied to *Zaluzania* and *Sabazia*, but differs in habit and in the absence of any ray.—G. Bentham.

Plate 9111.

CAMPTOSTEMON SCHULTZII, *Mast.*

Malvaceæ, Suborder Bombaceæ.

Camptostemon, *Mast. gen. nov. Epicalyx* cupuliformis, margine irregulariter sinuosus, extus uti calyx petala ovariumque dense lepidotus. *Calyx* campanulatus, epicalyce duplo longior, initio ut videtur clausus, demum supra medium in lobos 3 ovatos obtusos divisus. *Petala* 5, imbricata, persistentia, demum patentia, oblonga, obtusa, intus concava, plurinervia, nisi ad basin libera. *Tubus staminеus* petalis parum brevior iisque ad basin conjunctim enatis angulatus, sulcato-striatus, ad apicem in filamenta ∞ demum deflexa et ut videtur in phalanges 5 petalis oppositas disposita divisus. *Filamenta* tubo staminеo dimidio breviora, anguste liguliformia. *Antheræ* adnatæ, oblongæ, connectivo postice dilatato suborbiculari, biloculares, loculis rectis vel obscure tortuosis, rima longitudinali extrorsum dehiscentibus. *Pollinis* granula globosa, muriculata. *Staminodia* nulla. *Ovarium* sessile, tubo staminеo inclusum, ovoideum, biloculare. *Ovula* in quovis loculo solitaria, hippocrepica, placentæ axili versus medium affixa. *Funiculus* brevissimus. *Stylus* columnaris, teres, tubo staminеo inclusus, ad apicem in ramos 2 stigmatiferos breves divisus. *Stigmata* majuscula, ultra os tubi staminei exserta, subtriloba, lobis ovatis carnosulis medio longiore. *Fructus* adhuc ignotus.

C. Schultzii, *Mast. sp. unica.*

Arbor vel frutex, *ramis* teretibus, *ramulis* angulatis glabris divaricatis. *Folia* circa 3 poll. longa, 10 lin. lata, alterna, petiolata, elliptica, obtusa, basi cuneata, 1-nervia, arcuato-venosa, coriacea, superne glabra nitida, subtus dense lepidota, squamis orbicularibus. *Petioli* 8–10 lin. longi, superne canaliculati, apice glanduloso-incrassati. *Inflorescentia* cymosa, cymis terminalibus ramosis folio brevioribus plurifloris, pedunculis divaricatis angulatis lepidotis, pedicellis articulatis floribus brevioribus. *Flos* longitudine 3–6 lin.; epicalyx diam. 3–4 lin.; calycis lobi 4 lin. longi; petala sepalis æquilonga; corolla expansa, 8–9 lin. diametro.

Hab. Port Darwin, North Australia, *Schultz*, n. 511.

In the scaly pubescence, foliage, cupular epicalyx and closed calyx, this plant is closely related to the *Durioneæ* and especially to *Neesia*, Blume. The decidedly 2-celled anthers of the present plant do not invalidate its association with the *Bombaceæ*, as *Neesia*, *Eriodendron*, and others have sometimes 2-celled anthers, and at best the character is a very artificial one,

seeing that in a young stage the anthers of *Malvaceæ* in general are bilocular. The relationship to *Myrodia* (*Sterculiaceæ*) is less marked. In any case the 2-celled ovary, paucity of ovules, and 3-lobed stigmas are peculiar.—M. T. Masters.

Fig. 1. Bud. 2. Staminal tube with adherent petals, laid open, exposing the pistil. 3. Anthers. 4. Calyx and longitudinal section of ovary. 5. Transverse section of ovary. 6. Peltate scale of ovary.

Plate 1120.

CORYSANTHES CHEESEMANI, *Hook. f.*

Orchideæ.

C. Cheesemani, *Hook. f.;* folio sessili cordato-orbiculari apiculato, flore subsessili, pedunculo post anthesin elongato, ovario bractea spathacea vaginato, sepalo dorsali galeato obtuso, lateralibus setaceis minutis labello suppositis v. obsoletis, petalis lateralibus setaceis v. 0, labello tubuloso columnam amplectente, ore ampliato recurvo 2-lobo, lobis reflexis subintegris, marginibus basi utrinque in auriculam deflexam obtusam productis.

Hab. New Zealand, amongst bushes at Purewa, near Auckland, *F. F. Cheeseman, Esq.*

This curious little species was first brought to my notice in 1867 by F. F. Cheeseman, Esq., of Auckland, a very acute botanist, to whom I am indebted for several other interesting discoveries in the Northern Island, and notably the beautiful little *Hymenophyllum Cheesemani* (Baker, mss.), of which a figure is prepared for this work.

Corysanthes was found at Purewa, about five miles from Auckland, flowering in June and July, in a dense bush, principally composed of *Myrsine Urvillei*, *Senecio Forsteri*, and *Leptospermum scoparium*, with a thick undergrowth of various species of sedges.

Mr. Cheeseman describes the leaves as more membranous than those of any other species known to him, and the flower as dull purple with several greenish stripes and blotches on the surface of the upper sepal; he adds that the margins of the lip meet behind the column and enclose it, that the lateral sepals, when present, are very narrow-linear, placed under the lip and never exceed it, and that the petals, when present, are very minute indeed, subulate, deflexed, and placed under the basal tubes of the lip.

This description does not fully accord with my examination of several specimens, nor do either of them accord with Mr. Fitch's drawing, owing to the extreme difficulty of macerating the flower for the purpose of dissection. Mr. Cheeseman does not describe the curious ligulate, often twisted, process which proceeds in some specimens from the very base of the lip, at its medial line, and which I find to be sometimes replaced by two subulate processes; this is incorrectly represented in the accompanying Plate as a continuation of the base of the column. This must either be a process of the base of the lip, or consist of the two lateral sepals,—a view favoured by the fact of its being sometimes replaced by two subulate bodies. The subulate lateral petals I never found in all the specimens which I have examined.

The similarity of this species to Brown's Port Jackson *C. bicalcarata*, is so strong that I suspect that it may prove identical with it; I hesitate however to unite them without further materials, the dorsal sepal being much less arched in the New Zealand plant.

I regret to observe that it is proposed to replace Brown's generic name of *Corysanthes* by Salisbury's somewhat earlier one of *Corybas*, the totally erroneous description of which was (as was well known at the time) drawn up surreptitiously from an inspection of Bauer's figure of the Australian *Corysanthes bicalcarata*, when exhibited by Robert Brown at Sir Joseph Banks's rooms, with the latter name attached to it.—J. D. Hooker.

Fig. 1. Flower. 2. The same with the dorsal sepal removed. 3. Column, petals, and lip:—*all magnified.*

Plate 1121.

NORMANDIA NEO-CALEDONICA, *Hook. f.*

Rubiaceæ.

Normandia, *Hook. f. gen. nov. Flores* hermaphroditi. *Calycis* tubus elongato-obconicus, 5-gonus; limbi lobi 5, subulati, patentes, persistentes. *Corolla* infundibularis, fauce glabra; limbi lobi 5, in fl. ♀ breves erecti, in fl. ♂ longiores patentes revoluti, valvati. *Stamina* 5, basi tubi corollæ inserta, filamentis in fl. ♀ brevibus inclusis, in fl. ♂ filiformibus exsertis; antheræ magnæ, dorso prope basin affixæ, lineari-obovatæ, obtusæ, longe exsertæ, loculis basi liberis acutis. *Discus* minutus, annularis. *Ovarium* 2-loculare; styli rami 2, a basi discreti, filiformes, papillosi, demum longe exserti; ovula linearia, in loculis solitaria, e basi erecta, anatropa. *Fructus* 2-coccus, lobis calycinis cornutus, coccis intus medio longitudinaliter

dehiscentibus. *Semina* lineari-oblonga, a dorso compressa, albumine carnoso; embryo parvus, exilis, cotyledonibus orbiculatis, radicula tereti infera.—Frutex *v.* arbuscula, *ramulis striatis*. Folia *opposita*. Stipulæ *utrinque solitariæ, ovatæ, acutæ*. Flores *parvi, in corymbos terminales dispositi.*

N. Neo-Caledonica, *Hook. f.*

Hab. New Caledonia; on the mountains of Kanala, *Vieillard and Deplanche* (communicated by the late Dr. Le Normand, of Vire).

Frutex v. arbuscula, erectus, ramulis acute 4-gonis, angulis subalatis. *Folia* 1–1½ poll. longa, elliptico-ovata v. oblonga, subacuta, coriacea, enervia, superne siccitate fusca, subtus brunnea, marginibus incrassatis; petiolo ⅙–¼ poll. longo. *Stipulæ* interpetiolares utrinque solitariæ, triangulares, integræ v. fissæ, persistentes. *Flores* in corymbos terminales dichotome ramosos dispositi, breviter pedicellati, pedunculis angulatis, bracteolis minutis subulatis. *Corolla et capsula* ¼ poll. longæ. *Styli* primum exserti; stamina serius protrusa.

A very singular genus, evidently closely allied to *Coprosma*, though differing much in habit and the characters of the flower and fruit. —J. D. Hooker.

Fig. 1. Flower. 2. Corolla laid open. 3 and 4. Stamens. 5. Vertical section of ovary. 6. Fruit. 7. Vertical section of carpel and young seed. 8. Ripe seed: —*all magnified.*

Plate 1122.

DIDYMOCHLAMYS WHITEI, *Hook. f.*

Rubiaceæ.

Didymochlamys, *Hook. f. gen. nov.* *Calycis* tubus turbinatus; limbi 5-partiti segmenta lanceolata, acuminata, tubum superantia. *Corolla* cylindrico-campanulata, tubo intus basi annulo pilorum instructo, fauce glaberrima; limbi brevis lobi 5, erecti, breviter ovato-triangulares, obtusi, dorso sub apice setulosi, valvati, marginibus latissime inflexis alæformibus. *Stamina* 5, basin versus corollæ annulo pilorum inserta, filamentis subulatis inæquilongis; antheræ majusculæ, dorso basi affixæ, late oblongæ, apiculatæ, inclusæ. *Discus* conicus. *Ovarium* 2-loculare; stylus filiformis, stigmate clavellato 2-dentato ubique papilloso; ovula numerosa, placentis columnaribus e basi loculorum erectis dense conferta. *Fructus* . . . —Herba *prostrata, glaberrima*. Folia *alterna !, disticha*. Stipulæ *lineares, dissitæ.*

Flores *ad apicem pedunculi terminalis intra bracteas* 2 *amplas occlusi, sessiles, bracteolati.*

D. Whitei, *Hook. f.*

Hab. New Granada ; in dense woods at Quibdo, on the river Atrato, an affluent of the Magdalena, growing on stumps of trees, *R. B. White, Esq.*

Herba subsucculenta, 3–6-pollicaris, glaberrima, siccitate fragilis nigrescens, caule teretiusculo basi radicante. *Folia* disticha, ut videtur stricte alterna, sed verisimiliter dissita, subsessilia, oblongo- v. obovato-lanceolata, acuminata, basi anguste rotundata, glaberrima, carnosula, costa latiuscula nervisque arcuatis inconspicuis. *Stipulæ* uti folia ut videtur dissitæ, biformes ; aliæ membranaceæ, facie dorsali caulis prostrati sitæ, lineari-lanceolatæ, integræ v. 2-fidæ (v. 2-næ), petiolo remoto v. approximato ; aliæ coriaceæ v. siccitate corneæ, minutæ, unguiformes, fere axillares. *Pedunculus* ½-pollicaris, ascendens. *Bracteæ* transverse ellipticæ, 1 poll. diam., apiculatæ, venosæ ; bracteolæ lanceolatæ, flores superantes. *Flores* ¼ poll. longi, sessiles, erecti, cærulei.—J. D. Hooker.

Fig. 1. Portion of stem and leaf, and stipuliform bodies. 2. Stoma of the epidermis (drawn by Dr. M'Nab). 3. Flower and bracteole. 4. Corolla laid open. 5. Stamens (one omitted). 6. Vertical section of ovary :—*all magnified.*

Plate 1123.

CORYNULA PILOSA, *Hook. f.*

Rubiaceæ.

Corynula, *Hook. f. gen. nov. Calycis* tubus turbinatus ; limbus 5-partitus, laciniis subulato-lanceolatis inæqualibus persistentibus. *Corolla* anguste infundibularis, fauce glabra ; limbi lobi 5, breviusculi, erecti, obtusi, valvati. *Stamina* 5, fundo tubi corollæ inserta, filamentis filiformibus ; antheræ dorso basi affixæ, lineares, apiculatæ, longe exsertæ. *Discus* depressus. *Ovarium* 2-loculare ; stylus brevis, ramis 2 longe exsertis filiformibus undique hirsutis ; ovula in loculis solitaria, e basi erecta, a dorso compressa, cuneata, anatropa. *Fructus* pyriformis, coriaceus, alte 5-costatus, tarde in coccos 2 1-spermos plano-convexos dehiscens. *Semina* erecta, obovoidea, a dorso compressa, testa brunnea subcoriacea granulata, albumine dense carnoso ; embryo majusculus, cotyledonibus foliaceis cordatis, radicula tereti infera.—Herba *gracilis, repens, pilosa.* Folia *opposita.* Stipulæ 3–5-*lobæ.* Flores *axillares, pedunculati.*

C. pilosa, *Hook. f.*—*Mitchella pilosa*, Benth. in Pl. Hartw. 194; Walp. Rep. vi. 49.

Hab. Peru; in shady woods at Minasbomba, near Quito, *Hartweg*; Pichincha, *Capt. Hall*, *Jameson*, where it forms great tufts on the ground at 11,000 feet (*Spruce*, n. 5505). Closely allied to *Nertera*, but differing in the dry 2-coccous fruit and inflorescence.—J. D. Hooker.

Fig. 1. Portion of stem, leaf, and stipules. 2 and 3. Flowers. 4. Flower with corolla laid open. 5. Fruit. 6. Fruit, cut transversely. 7. Seed. 8. Vertical section of ditto:—*all magnified*.

Plate 1124.

FERGUSONIA THWAITESII, *Hook. f.*

Rubiaceæ.

Fergusonia, *Hook. f. gen. nov.* *Calycis* tubus obovoideo-pyriformis; limbi lobi 4, æquales v. subæquales, erecti, ovato-lanceolati, ciliati, persistentes. *Corolla* infundibularis, fauce glabra; limbi lobi 4, breves, patentes, apice ciliati, valvati. *Stamina* 4, ore corollæ inter lobos inserta, filamentis breviusculis; antheræ dorso affixæ, lineari-oblongæ. *Discus* 4-lobus. *Ovarium* 4-loculare; stylus filiformis, ramis 2 linearibus hirsutis interdum connatis; ovula in loculis solitaria, e basi erecta, obovata, compressa, anatropa. *Fructus* 4-coccus, coccis subpyriformibus obscure 3-gonis, lobis calycinis coronatis coriacéis 1-spermis. *Semina* pyriformia, compressa, erecta, funiculo brevi rigidulo, testa membranacea, albumine dense carnoso; embryo in basi seminis rectus, subcylindricus, cotyledonibus planis radicula tereti infera vix latioribus.—Herba *ramosa*, *basi radicans*. Folia *opposita*. Stipulæ *intrapetiolares*, *integræ*, *persistentes*. Flores *axillares*, *solitarii*. Fructus *parvus*.

F. Zeylanica, *Hook. f.*—*Borreria tetracocca*, Thwaites, Enum. Pl. Zeyl. 442; Beddome, Ic. Pl. Ind. Or. t. 39.

Hab. Ceylon, near Colombo, *W. Ferguson, Esq.*

Herba gracilis, 1–2-pedalis, habitu *Spermacocis*, caule 4-gono ramoso basi prostrato radicante, ramulis flexuosis adscendentibus nodis ciliatis. *Folia* 1–1½ poll. longa, opposita, brevissime petiolata, lanceolata v. ovato- v. elliptico-lanceolata, acuta v. acuminata, subchartacea, scaberula. *Stipulæ* lanceolatæ, herbaceæ, erectæ, persistentes, utrinque cum petiolis connatæ

Flores $\frac{1}{6}$ poll. longi, in axillis foliorum solitarii, breviter pedicellati, bracteis 2 oppositis utrinque cum stipula conjunctis involucrati. *Fructus* parvus, tumidus.—J. D. Hooker.

Fig. 1. Flower and bracts. 2. Corolla laid open. 3. Vertical section of ovary. 4. Fruit. 5. Coccus. 6. Seed. 7. Vertical section of ditto. 8. Embryo:—*all magnified.*

Plate 1125.

CERATOPYXIS VERBENACEA, *Hook. f.*

Rubiaceæ.

Ceratopyxis, *Hook. f. gen. nov. Calycis* tubus ovoideus; lobi 5, rigidi, erecti, subulato-lanceolati, persistentes. *Corolla* infundibularis, fauce glabra; limbi lobi 5, lineari-lanceolati, revoluti, valvati. *Stamina* 5, fundo tubi corollæ inserta, filamentis liberis complanatis puberulis; antheræ dorso prope basin affixæ, exsertæ, lineari-elongatæ. *Discus* 4-lobus. *Ovarium* 2-loculare; stylus filiformis, stigmate clavellato apice 2-fido; ovula in loculis solitaria, ab apice pendula, elongata, cylindrica, funiculo incrassato. *Capsula* parva, subcoriacea, pubescens, fere orbicularis, a latere valde compressa, 2-locularis, septicide 2-valvis, valvis calycis lobis rigidis patentibus coronatis. *Semina* pendula, subreniformi-oblonga, a latere compressa, funiculo incrassato, testa tenuissima, albumine dense carnoso; embryo parvus, teretiusculus, cotyledonibus brevibus ovatis, radicula longiuscula supera.—Frutex *resinifluus.* Folia *opposita.* Stipulæ *intrapetiolares, in vaginam connatæ.* Flores *parvi, in thyrsos terminales erectos densifloros dispositi.*

C. verbenacea, *Hook. f.—Rondeletia? verbenacea,* Griseb. Cat. Pl. Cub. 130. *Phialanthus spicatus,* Sauvalle, Pl. Cub. 71.

Hab. Western Cuba, *Wright,* n. 2695.

Frutex strictus, erectus, robustus, ramulis teretibus, nodis resinosis. *Folia* 2–3 poll. longa, elliptico-obovato-lanceolata, acuminata, breviter crasse petiolata, glaberrima, nervis numerosis gracilibus parallelis a costa valida divergentibus in unam intramarginalem confluentibus. *Stipulæ* intrapetiolares, majusculæ, late ovatæ, cuspidatæ, coriaceæ, fuscæ, persistentes, in vaginam annularem demum solutam connatæ. *Flores* $\frac{1}{4}$ poll. longi, in thyrsos axillares et terminales cylindricos erectos obtusos densifloros dispositi, pedunculo valido, inferne sæpe stipulis vaginato. *Capsulæ* $\frac{1}{4}$ poll. longæ, pubescentes.—J. D. Hooker.

Fig. 1. Flower. 2. Stamen. 3. Anther. 4. Vertical section of ovary. 5. Capsule. 6. Seed. 7. Vertical section of ditto:—*all magnified.*

Plate 1126.

AULACOCALYX JASMINIFLORA, *Hook. f.*

Rubiaceæ, Tribe Albertæ.

Aulacocalyx, *Hook. f. in Benth. and Hook. f. Gen. Pl.* ii., 109.

Hab.—Western tropical Africa; Mount John River, Kongui, Lat. 1° N., *G. Mann.*, Sept., 1862.

Frutex 15-pedalis, ramosus, ramis teretibus, ramulis et inflorescentia sericeis. *Folia* opposita, breviter petiolata, 3-4 poll. longa, elliptica v. elliptico-lanceolata, caudato-acuminata, basi in petiolum vix ¼ poll. longum angustata, vix coriacea, utrinque costa puberula excepta glaberrima, nervis paucis tenuibus obliquis, nervulis transversis crebris parallelis tenuissimis. *Stipulæ* intrapetiolares, subulato-lanceolatæ, rigidæ, sericeæ, deciduæ. *Flores* in pedunculos breves axillares fasciculati, sessiles, bracteati; bracteis ovato-subulatis, calycis tubum æquantibus. *Calyx* ½–pollicaris, elongatus; tubus brevis, obovoideus, profunde 5-sulcatus; limbus tubulosus, extus et intus sericeus, 5-fidus, laciniis elongatis subulato-lanceolatis erectis rigidis. *Corolla* infundibularis, extus sericea, tubo pollicari gracili intus basin versus pubescente, fauce glabra; limbi 1-poll. diametro lobi 5, patentes, lineari-oblongi, subacuti, stricte contorti, extus sericei. *Stamina* 5, fauci corollæ inserta; antheræ sessiles, dorso affixæ, anguste lineari-elongatæ, recurvæ, apiculatæ, ½-exsertæ. *Discus* depressus. *Ovarium* 2-loculare; stylus gracilis, exsertus, supra medium incrassatus, ramis 2 brevibus v. elongatis recurvis; ovula in loculis solitaria, septo infra apicem affixa, pendula, raphe ut videtur ventrali. *Fructus* ignotus.

Aulacocalyx belongs to a small group of *Rubiaceæ*, distinguished by the contorted corolla and 2-celled ovary with solitary pendulous ovules, having a superior micropyle, all of which hitherto discovered are tropical African; but it appears to differ from the rest of this group in the ventral position of the raphe; if, indeed, I am right in this, a difficult point to discover in living one-ovuled *Rubiaceæ*, and much more so in dried specimens of them. Be this as it may, it certainly belongs to no other section, and resembles *Cremaspora* in too many points to be removed far from that genus. The fruit is unfortunately unknown.—J. D. Hooker.

Fig. 1. Calyx, style, and bracteoles; 2. Vertical section of calyx and ovary; 3. Corolla-lobe and stamens:—*all magnified.*

Plate 1127.

BELONOPHORA COFFEOIDES, *Hook. f.*

RUBIACEÆ, Tribe ALBERTEÆ.

Belonophora, *Hook. f. in Benth. and Hook. f. Gen. Pl.* ii. 109.

HAB. West coast of Africa; Isle of St. Thomas, alt. 3000 ft., *G. Mann.*, 1860.

Arbor 40-pedalis, floribus exceptis glaberrima; ramulis gracilibus teretibus, cortice pallido, ultimis compressis. *Folia* 5–8-poll. longa, opposita, breviter petiolata, elliptico- v. obovato-lanceolata, obtusa, caudato-acuminata, in petiolum angustata, vix coriacea, exsiccata sordide-viridia, costa nervisque paucis divergentibus tenuibus, nervulis reticulatis tenuissimis; petiolo $\frac{1}{4}$ poll. longo. *Stipulæ* pollicares, intrapetiolares, e basi subulato-lanceolata longissimæ tenuissime productæ, chartaceæ, striatæ, deciduæ. *Flores* axillares, sessiles, fasciculati. *Calyx* parvus, 4-bracteolatus; tubus obconicus; limbus 4–5 fidus, lobis subequalibus obtusis ciliolatis, persistens. *Corolla* hypocrateriformis $\frac{1}{2}$-pollicaris, tubo cylindraceo sericeo, fauce glaberrima; limbi $\frac{1}{2}$–$\frac{1}{3}$ poll. diam. lobi 5, lineares, oblongi, obtusi, patentes, stricte contorti. *Stamina* 5, tubo corollæ inserta; antheræ sessiles, dorso medio affixæ, lineares, subulato-acuminatæ, inclusæ. *Discus* tumidus. *Ovarium* 2-loculare; stylus brevis, ramis 2 subulatis suberectis papillosis; ovula in loculis solitaria, ab apice pendula, anatropa. *Fructus* globosus, coriaceus, 2-locularis, loculis 1-spermis, septo tenui. *Semina* pendula, ovoidea, hilo apicem versus ventrali minuto, testa firma, albumine corneo; embryo minutus, curvus, apicem versus seminis inversus, cotyledonibus parvis cordatis, radicula tereti obtusa hilo proxima.

This and the following genus belong to a small West African tribe of Alberteæ; it resembles *Coffea* in habit, but differs in the position and direction of the ovule, in the eglandular calyx, and in the albumen not being furrowed in front.—J. D. HOOKER.

Fig. 1. Flower; 2. The same with the corolla laid open; 3. Stamen; 4. Style and vertical section of ovary; 5. Ovule; 6. Fruit; 7. vertical and 8 transverse section of ditto; 9, 10 and 11. dorsal lateral and ventral views of seed; 12. vertical section of the same; 13. Embryo:—all but 6-11 *magnified*.

PLATE 1128.

HOMALOCLADOS COLORATA; *Hook, f.*

RUBIACEÆ. Tribe COUSSAREÆ.

Genus **Homaloclados,** *Hook. f. in Benth. and Hook. f. Gen. Pl.* ii. 122. *H. colorata, Hf. l.c.* Faramea colorata, *Benth. in Linnæa* xxiii., 452.

HAB. Rio de Janeiro; in virgin woods, *Tweedie, Gardner, Sello, Glaziou,* etc.

Frutex 6–pedalis, glaberrimus, sempervirens, 2-chotome ramosis, ramis sæpe supra-alaribus, divaricatis, ramulis compressis v. angulatis, cortice pallido. *Folia* 2–3½-poll. longa, breviter petiolata, elliptico-ovata v. obovata, acuta obtusa v. obtuse-subcaudata, coriacea, pallide viridia, subtus pallidiora, marginibus undulatis, nervis numerosis patentibus tenuibus; petiolo $\frac{1}{10}$–$\frac{1}{4}$-poll. longo. *Stipulæ* intra-petiolares, latæ, coriaceæ, carinatæ, carina in mucronem rigidum acicularem pungentem excurrente. *Cymæ* terminales, umbellæformes, erectæ, 3–5-flores; pedunculo ½–pollicari, compresso; pedicellis pedunculo æquilongis compressis. *Calyx* ½–⅓-poll. longus, coloratus; tubus brevis, turbinatus; limbus magnus, infundibularis v. campanulatus, membranaceus, reticulatus, ore ampliato ½–poll. diametro, 4–6 fido, lobis obtusis, persistens. *Corolla* elongata, hypocraterimorpha, tubo cylindraceo calyce longior, fauce glaberrima; limbi ⅓–poll. diametro lobi 4, lati, patentes, valvati. *Stamina* 4, basin versus tubi corollæ inserta, filamentis brevibus; antheræ dorso supra basin affixæ, lineares, inclusæ. *Discus* elevatus. *Ovarium* 1-loculare; stylus filiformis, ramis brevibus v. linearibus pubescentibus; ovula in loculi basi gemina, erecta, sessilia, obovoidea. *Fructus* globosus, pisiformis, ⅓-poll. diam., calycis limbo persistente indurato coronatus, coriaceus, viridis, 1-spermus. *Semen* globosum, cavum, basi pericarpii adnatum, foramine magno infero, testa inconspicua, albumine carneo; embryo minutus, lateralis.

When described in the Genera Plantarum, the fruit of this genus was unknown. It has since been received from M. Glaziou, and proves to be identical with that of *Faramea*, and is similarly deeply excavated at the hilum; to such an extent, indeed, that the albumen forms a hollow sphere with a large basal circular aperture.

Homaloclados contains but two known species, both Brazilian, and agreeing remarkably in habit. It belongs to the small tribe of *Coussareæ*, which differs from *Psychotrieæ* in habit, in the ovary being 1-celled, or if 2-celled with the septum evanescent, in the amphitropous basilar ovules inserted very close together, and in the 1-seeded fruit.—J. D. HOOKER.

Fig. 1. Flower; 2. the same with the corolla removed and laid open; 3 and 4. Stamens; 5. Style and vertical section of ovary :—*all magnified.*

Plate 1129.

PSILANTHUS MANNII, *Hook, f.*

Rubiaceæ, Tribe Ixoreæ.

Psilanthus, *Hook. in Benth. and Hook f. Gen. Pl.* ii. 115.

Hab. Fernando Po; on the beach, *G. Mann* (1860).

Frutex glaberrimus, 10-pedalis, ramulis gracilibus teretibus, ultimis compressis, cortice lævi brunneo. *Folia* opposita, 5–7 poll. longa, breviter petiolata, elliptico-oblonga, obtuse caudato-acuminata, vix coriacea, pallide viridia, costa tenui, nervis paucis arcuatis, nervulis remotis; petiolo $\frac{1}{4}$–$\frac{1}{3}$ poll. longo. *Stipulæ* parvæ, intrapetiolares, triangulares, acutæ. *Flores* majusculi, axillares, solitarii v. pauci, albi, pedunculo minuto tumido ebracteato sessiles. *Calyx* minutus, tubo brevi obconico; dentes 5, minuti, triangulares, in fructu foliaceo-dilatati. *Corolla* alba, tubo gracillimo 2–3$\frac{1}{2}$ pollicari, fauce nuda; limbi 2–3 poll. diametro lobi oblongi, subacuti, membranacei, stricte contorti. *Stamina* 5, ore corollæ inserta; antheræ sessiles, dorso affixæ, lineares, apice unguiculatæ, $\frac{1}{3}$–exsertæ. *Discus* tumidus, *Ovarium* 2–loculare; stylus filiformis, ramis 2 brevibus linearibus obtusis; ovula in loculis solitaria, septo medio late adnata, amphitropa. ***Fructus*** obovoideus, vertice late umbonatus, lobis calycis subfoliaceis coronatus, endocarpio tenuiter crustaceo. *Semina* oblonga, umbilico ventrali.

A very singular plant, especially in respect of the development of the flower. In an early stage the calyx, which is always very minute, is found seated on a tumid subglobose annulus or peduncle in the thickened node, at the leaf axil; the nature of this ring I cannot discover from the dried specimens, but it probably consists of a floral pedicel with confluent bracteoles. The ovary and calyx never exceed the twelfth of an inch long. The corolla appears as a cylindric body, somewhat dilated in the middle, when dry coated with a gummy secretion, and is not more than $\frac{1}{4}$ of an inch long at the time when the calyx and ovary are fully formed; after this its tube rapidly elongates to nearly four inches, and the lobes at the same time expand. There are no specimens in a state between that of the fully formed flower and of the fully formed fruit in which the minute calyx-teeth that crown the ovary are developed into green coriaceus lanceolate lobes half an inch long.

The fruit contains no seed, but I have little doubt that the plant is correctly referred to the tribe *Ixoreæ*; from the solitary ovules, broadly adnate to about the middle of the septum, with the micropyle (I think certainly) downwards. As a genus is it evidently clearly allied both in habit and characters to *Coffea*, differing in the accrescent eglandular caylx, and in the structure of the fruit, which is crustaceous and 2-celled, not drupaceous with 2 pyrenes. I do not, however, place much dependence on this last point, for though fully formed, being seedless, the fruits of *Psilanthus* may be abnormally developed.

Fig. 1. Ovary, calyx, bracts and style; 2 and 3. Stamens; 4. Vertical section of ovary :— *all magnified.*

PLATE 1130.

HUALANIA COLLETIOIDES, *Ph.*

POLYGALACEÆ.

H. colletioides, *Phillipi in Linnæa* xxxiii. (1864.) *p.* 19.

Frutex aphyllus, glaberrimus, spinosus, spinis crassis alternis patentibus; floribus in basi spinarum glomeratis, breviter pedunculatis, albidis.

HAB. Prov. Mendoza, *Diaz*; Copiapo, *R. Pearce!* arid shingly plain near Jachal, Argentine Republic, *Dr. Jameson!*

Spinæ ½ poll. longæ, læte virides. *Flores* numerosæ e tuberculo earum basali prorumpunt et limbo brevissimo squamuloso circumdantur; pedunculi ad summum 1 lin. longi. *Calyx* parum brevior; foliola ejus ovata, apice rotundata fere coriacea, margine albido scarioso. *Carina* 2 lin. longa, e lutescente albida; petala lateralia 1½ lin. longa angusta oblonga centro puncto violaceo notata. *Fructus* immaturus (?) viridis, 8–lin. longus, 1¼–lin. crassus, basi longe attenuatus. *Semina* cum pilis albis sericeo-micantia, 5 lin. longa. *(Description from Phillipi, l.c.)*—D. OLIVER.

Fig. 1. Flower, side view; 2. Petals and staminal sheath; 3. Same laid open; 4. Anther; 5. Pistil with, and 6 without, calyx; 7. Young fruit.

PLATE 1131.

HYMENOCARDIA ULMOIDES, *Oliv.*

EUPHORBIACEÆ.

H. ulmoides, *Oliv.*; fructibus late obovato-rotundatis emarginatis basi obtusis v. late cuneatis, margine utrinque a basi ad apicem latiuscule alatis, loculis centro fructuum dimidiam longitudinem latitudinemque occupantibus.

HAB. Dar Salam, Zanzibar, *Dr. Kirk!* Angola, *Dr. Welwitsch!*

Ramuli graciles, glabri, v. primum pubescentes. *Folia* oblongo- vel ovato-elliptica leviter obtusiuscule acuminata, glabra vel glabrescentia, 1–1½ poll. longa, ½–⅓ poll. lata; petiolus gracilis ¼ poll. longus. *Spicæ* masc. ⅓–¾ poll. longæ, sæpius in paniculas distichas parvas dispositæ. *Flores* 1/12 poll. diam. *Fructus* ½–⅔ poll. longi et lati; gynophorus ⅙–¼ poll. longus; pedicelli fructiferi filiformes, rigidi, ¼–⅓ poll. longi.—. D. OLIVER.

Fig. 1. Branch with male flowers; 2. Male flower with bract; 3. Same laid open; 4. Anthers; 5. Branch with pistillate flowers (collected by Dr. Welwitsch); 6. Pistillate flower; 7. Ovary; 8. Branch bearing fruit:—*nat. size.*

Plate 1132.

HYMENOPHYLLUM (LEPTOCIONIUM) CHEESEMANNI, *Baker*.

Filices, Tribe Hymenophylleæ.

H. Cheesemanni, *Baker n. sp.*; rhizomate nudo filiformi, stipitibus brevissimis filiformibus nudis, frondibus minimis dichotome furcatis vel palmatim 3–4-fidis raro simplicibus, lobis ligulatis obtusis ciliato-dentatis, venis in segmentis solitariis centralibus, soris solitariis terminalibus, involucri valvis rotundatis integris basi solum immersis.

Hab. New Zealand; Titiranga range, at an elevation of 1200 feet, discovered by Mr. T. F. Cheesemann in 1871.

Rhizomata late vagantia intricata. *Stipites* segregati, erecti, 3–6 lin. longi, glabri, haud paleacei. *Lamina* viridis, membranacea, glabra, mox brunnescens, 3–6 lin. longa, basi in stipitem angustata, lobis 3–5 lin. latis ligulatis simplicibus, lateralibus erecto-patentibus. *Dentes* marginales lineari-subulatæ, ascendentes, demum caducæ, cellulæ magnæ irregulariter hexagonæ marginales reliquis conformæ, parenchymatosæ. *Involucrum* vix lineam longum, semper ad apicem frondis vel segmentorum solitarium, terminale, valvis duris brunneis integerrimis lineato-marginatis dorso nudis lævibus.

A very distinct novelty, nearest *H. minimum*, A Rich, 'Voy. Astrolabe,' t. 14, fig. 2; but differing essentially in the involucre, and in the cutting of the frond, in which it much resembles some of the forms of *Trichomanes digitatum*. —J. G. Baker.

Fig. 1. Lobe of frond with involucre. 2. Valve of involucre removed, exposing the sporangia; 3. Sporange.

Plate 1133.

BOTHRIOCLINE SCHIMPERI, *Oliv. et Hiern*.

Compositæ, Tribe Vernoniaceæ.

Bothriocline, *Oliv. gen. nov.* *Capitula* homogama, tubuliflora. *Involucrum* campanulatum, bracteis ∞–seriatis imbricatis tenuiter herbaceis scarioso-marginatis v. interioribus siccis, exterioribus gradatim minoribus. *Receptaculum* planum v. convexum, alveolatum. *Corollæ* æquales, regulares, tubo tenui, limbo anguste 5–fido. *Antheræ* basi sagittatæ, auriculis obtusis. *Styli* rami subulati, hirtelli. *Achænia* (immatura) obovoidea v. turbinata, 5–4-costata, apice rotundata. *Pappi* setæ paucæ, scabræ, caducissimæ.— Herba foliis *oppositis verticillatisve*. Capitula *corymbosa*. Corollæ *purpureæ ?*

B. Schimperi, *Oliv. et Hiern. Fl. Trop. Afr.* iii. *med., species unica.*

Hab. Abyssinia, *Schimper, coll.* 1863–8, *n.* 1497. There is also a variety gathered on Mount Kilimanjaro by the Rev. C. New, differing in the more tomentose stem and under side of the leaves.

Herba erecta, valida, pluripedalis, superne ramosa, glabra v. superne tomentoso-pubescens. *Folia* pleraque 3–4–natim verticillata, ramealia interdum opposita, ovato-lanceolata v. lanceolata, acuta, serrata, basi rotundata, 3–6-pollicaria, supra glabra subtus sparse pilosula; petiolis brevissimis ciliatis linea pilosa connexis. *Capitula* vix semipollicem diametro, in corymbo terminali lato numerosa, conferta, pedunculis brevibus. *Involucri* squamæ eleganter scarioso-marginatæ, interiores acutæ, intimæ lineari-oblongæ undique scariosæ. *Corollæ* vix involucrum excedentes, leviter glandulosæ.

This genus is allied to *Centratherum*, of which it has the pappus, but the involucre is different, and the opposite or verticillate leaves are quite exceptional in the tribe.—G. Bentham.

Fig. 1. Involucre and receptacle, longitudinal section; 2. Floret; 3. Three of its stamens; 4. Summit of its style; 5. Bristle of the pappus.

Plate 1134.

HETEROPHYLLÆA PUSTULATA, *Hook. f.*

Rubiaceæ, Tribe Cinchoneæ?

Heterophyllæa, *Hook. f. in Benth and Hook. f. Gen. Pl.* ii. 37.

Hab. Juguy Mountains in the northern district of La Plata, on the confines of Bolivia, *R. Pearce. Fl. Feb.* 1864.

Frutex 4–6-pedalis, sempervirens, gracilis, glaberrimus, ramis gracilibus teretibus, cortice pallido crebre pustulata, pustulis apice depressis. *Folia* opposita, 2–3-poll. longa, breviter petiolata, lanceolata, acuminata, crenata, sinubus faciebusque pustulatis, coriacea, exsiccata superne fusca, nervis obscuris, subtus pallidiora costa crassiuscula, nervis obliquis, nervulis laxe reticulatis; petiolo vix $\frac{1}{10}$ poll. longo. *Stipulæ* interpetiolares, triangulares, acutæ v. apice 2-dentatæ, diu persistentes. *Flores* in cymas axillares pustulatas paucifloras dispositi, odori, albi; pedunculo brevi nutanti, pedicellis alternis $\frac{1}{2}$-pollicaribus basi bracteolatis, bracteolis lineari-subulatis, elongatis, deciduis. *Calycis* tubus $\frac{1}{8}$-poll. longus, obovoideus; limbi lobi 4-5, subulato-lanceolati, tubo longiores, erecti, extus pustulati. *Corollæ* tubus $2\frac{1}{2}$–3-poll. longus, lente curvus, fauce vix ampliata intus villosa; limbi lobi 4 v. 5, breves, ovato-lanceolati, subacuti, patentes, valvati, *Stamina* 5, ima fauci corollæ inserta; antheræ subsessiles dorso affixæ, lineari-oblongæ,

utrinque obtusæ, inclusæ. *Discus* hemisphæricus. *Ovarium* 2-loculare; stylus filiformis, ramis 2 filiformi-subulatis patentibus semi-exsertis undique pubescentibus; ovula in loculis perplurima, placentis tumidis septo adnatis undique peltatim affixa. *Fructus* ignotus.

The pustules, which extend over the stem, leaves, peduncles, pedicels, calyx, and stipules of this plant, are unique in the Order, and resemble those of *Ruta* in external appearance; and together with the strongly crenate leaves and alternate pedicels, combine to render this one of the most anomalous of *Rubiaceæ*. Nevertheless, from the structure of the stem, style-arms, anthers and ovary, I have little hesitation in placing it in the tribe *Cinchoneæ*, and near to *Bouvardia* and *Manettia*, differing from the latter in the insertion of the placentas. The crenation of the leaves, the margins of which are slightly thickened and furnished with a pustular gland at every sinus is very remarkable, and quite unlike the toothing of *Carlemannia*, or *Sylvianthus* (Plate 1048), or of *Neurocalyx*.

I have seen but one specimen of this plant, which was discovered by Mr. Pearce, a very intelligent collector for Messrs. Veitch, who formed an excellent herbarium in North La Plata, and other parts of South America, that had not previously been visited by any naturalist.

Fig. 1. Portion of leaf. 2. Peduncle and flower-bud. 3. Upper part of corolla laid open. 4. Vertical section of ovary, with style. 5. Ovule:—*all magnified.*

Plate 1135.

SPHACOPHYLLUM BOJERI, *Benth.*

Compositæ, Tribe Inuloideæ Buphthalmeæ.

Sphacophyllum, *Benth. gen. nov.* *Capitula* heterogama, radiata, floribus radii fœmineis 1-seriatis discique hermaphroditis fertilibus. *Involucrum* late campanulatum, bracteis pauciseriatis angustis acutis, exterioribus brevioribus. *Receptaculum* convexiusculum, paleis complicatis rigidulis flores disci amplectentibus deciduis onustum. *Corollæ* fœmineæ ligulatæ, lamina patente subintegra; hermaphroditæ regulares, tubulosæ, limbo anguste campanulato semi-5-fido. *Antheræ* basi caudis longis tenuibus simplicibus appendiculatæ. *Staminodia* in floribus fœmineis plus minus evoluta. *Styli* florum hermaphroditorum rami lineares, subcomplanati, apice rotundati. *Achænia* angusta, 5-costata, callo basilari majusculo. *Pappus* brevissime cupulatus, denticulatus.—Suffrutex *brevissime pubescens, foliis alternis.* Capitula *parva, terminalia, v. in axillis superioribus pedunculata.* Corollæ *flavæ.*

S. madagascariense, *Benth. single species.* *Epallage salvifolia*, D.C. Prod. vi. 3.

Hab. Madagascar. Dry stony places round Mananzary in the province of Emirna, *Bojer*.

Caules basi lignosi, ramis tenuibus superne pubescentibus et minute glandulosis. *Folia* ovato-lanceolata v. oblongo-elliptica, obtusa v. mucronato-acuta, integerrima v. minute undulato-dentata, 1–1½-pollicaria, basi in petiolum 1–2 lin. longum contracta, pennivenia et tenuiter reticulato-rugosa, utrinque subtus præsertim minute glanduloso-puberula. *Capitula* 3–4-lin. diametro, pedunculis tenuibus 1–1½-pollicaribus fulta, sæpius 3–5 ad apices ramorum, quorum inferiora ad axillas foliorum superiorum.

Fig. 1. Receptacle, involucre, and paleæ, longitudinal section. 2. Floret of the ray. 3. One of its staminodia. 4. Summit of its style. 5. Floret of the disk and subtending palea. 6. Three of its stamens, the anther-tails not represented sufficiently fine. 7. Summit of its style.

This plant was included by De Candolle in his genus *Epallage* from the same country. The true typical species of that genus have, however, a very different habit, no tails to the anthers, and the ribs of the achenes terminating in small aristæ alternating with distinct scales of the pappus, which places them among the Helianthoideæ, whilst *Sphacophyllum* appears to me to be a genuine Buphthalmea.—G. Bentham.

Plate 1136.

COLEOCOMA CENTAUREA, *F. Muell.*

Compositæ, Tribe Inuloideæ Plucheineæ.

C. centaurea, *F. Muell. in Hook. Kew Journ.* ix. 19; *Benth. Fl. Austral.* iii. 533.

Hab. Tropical Australia; Sturt's Creek, *F. Mueller*.

Caules humiles, duri, erecti, rigidi, glabri, basi sublignosi quamvis forte annui. *Folia* alterna, subsessilia, linearia v. lineari-lanceolata, acuta, dentibus paucis parvis acutis notata, basi contracta, superiora interdum breviter decurrentia, vix pollicaria, summa sæpe 2–3 sub capitulo conferta. *Capitula* inter folia ultima ad apices ramorum v. in dichotomiis sessilia. *Involucrum* ovoideum, 4–5 lin. longum, bracteis latis coriaceis appressis, apice scarioso-marginatis mucronulatis, more *Centaureæ* subappendiculatis. *Corollæ* vix exsertæ, fœmineæ 2–3-seriatæ tenues, hermaphroditæ plures, steriles. *Pappi* paleæ 1-seriatæ, florum fertilium alte connatæ, florum sterilium fere liberæ.

Fig. 1. Involucre and receptacle, longitudinal section. 2. Female floret. 3. Summit of its style. 4. Hermaphrodite sterile floret. 5. Three of its stamens. 6. Summit of its style represented as divided, but the branches usually cohere to the end. 7. Achene of the female florets with its pappus.

The genus is closely allied to *Pterigeron* from the same country, differing chiefly in the pappus and in the habit which is not unlike that of some European *Centaureæ* or South African *Geigeriæ* or *Gymnarrhenæ*.—G. Bentham.

Plate 1137.

CHILIOCEPHALUM SCHIMPERI, *Benth.*

Compositæ, Tribe Inuloideæ Gnaphalieæ.

Chiliocephalum, *Benth. gen. nov. Capitula* heterogama, disciformia, floribus in ambitu fœmineis fertilibus plurimis, in disco hermaphroditis perpaucis (1–2) pariter fertilibus. *Involucrum* oblongum, bracteis paucis imbricatis hyalino-scariosis appressis, exterioribus brevioribus dorso sublanatis. *Receptaculum* parvum, nudum. *Corollæ* omnes tubulosæ, fœmineæ tubo filiformi, limbo parvo campanulato 3–5-fido; hermaphroditæ tubo brevi, limbo elongato angusto apice 5-fido. *Antheræ* basi sagittatæ, auriculis caudis brevibus subramosis appendiculatis. *Styli* florum hermaphroditorum rami subteretes, apice truncati. *Achænia* anguste oblonga; pappus 0.—Herba, *erecta cano-tomentosa, habitu Achyroclinis.* Folia *alterna, integra.* Capitula *minima, dense conferta, corymbosa.*

C. Schimperi, *Benth. single species.*

Hab. Abyssinia; banks of elevated mountain streams in Saman, *Schimper.*

Caules e basi dura (an perenni?) erecti, subsimplices, 1–2-pedales, laxe cano-tomentosi v. sublanati. *Folia* sessilia v. anguste decurrentia, lanceolata v. anguste oblonga, acuta v. obtusa, integerrima, sæpe undulata, supra tenuiter tomentosa v. demum glabrata, subtus cano-tomentosa, majora 1–2-pollicaria. *Capitula* vix lineam longa, innumera, densissime cymosa, cymis $\frac{1}{4}$—$\frac{1}{2}$ poll. diametro plurimis interdum numerosis in corymbum densum 2–4-poll. diametro confertis. *Involucra* canescentia.—G. Bentham.

Fig. 1. Flower-head much magnified. 2. Involucre and receptacle, longitudinal section. 3. Female floret. 4. Summit of its style, the branches represented too thick and too much truncate. 5. Hermaphrodite floret. 6. Three of its stamens, not sufficiently tailed. 7. Style.

Plate 1138.

DENEKIA CAPENSIS, *Thunb.*

Compositæ, Tribe Inuloideæ Plucheineæ.

D. capensis, *Thunb.*; *DC. Prod.* v. 462, foliis subtus albo-tomentosis.

Hab. S. Africa, apparently common in the eastern districts of the Cape Colony, extending to the highlands of the Batoka country within the tropics.

Caules e basi annua v. perenni, numerosi, decumbentes v. ascendentes, plerique infra 6 poll., v. in speciminibus vegetioribus erectiores subpedales, tenues, glabri v. tomento deciduo vestiti. *Folia* oblongo-linearia, sessilia, amplexicaulia, acuta, margine sæpius undulata interdumque sinuato-dentata, 1–3 poll. rarius 4 poll. longa, supra glabra v. laxe tomentosa, subtus tomento appresso incana; inferiora v. radicalia sæpe subspathulata obtusa in petiolum contracta. *Capitula* vix 2 lin. diametro, in glomerulos v. cymas parvos plus minus pedunculatos terminales disposita, foliis floralibus superioribusque vulgo diminutis. *Flores* albi, fœminei in capitulo numerosi, centrales hermaphroditi sterilesque multo pauciores, achæniis vacuis seta unica apice plumosa coronatis.

Fig. 1. Involucre and receptacle. 2. Female floret. 3. Summit of its style, the branches represented much too thick. 4. Hermaphrodite floret. 5. Three of its stamens, the very fine tails to the anthers not clearly represented. 6. Summit of its style. 7. Seta forming the pappus.

Besides this species, the genus comprises a second one described with the leaves green on both sides; and in Burchell's collection are some small specimens, with the name of *D. cærulea*, with the note that the central hermaphrodite florets are fertile, and the achenes rostrate; the specimens are, however, not sufficiently advanced to verify these characters.—G. Bentham.

Plate 1139.

LUINA HYPOLEUCA, *Benth.*

Compositæ, Tribe Senecionideæ?

Luina, *Benth. gen. nov.* *Capitula* homogama, discoidea, floribus omnibus hermaphroditis fertilibus. *Involucrum* campanulatum, bracteis subuni-

seriatis subæqualibus carinatis, exterioribus perpaucis minimis v. nullis. *Receptaculum* subplanum, leviter foveolatum. *Corollæ* regulares, tubulosæ, limbo elongato subcylindraceo apice 5-fido. *Antheræ* basi bimucronatæ breviter 2-setosæ v. muticæ. *Styli* rami elongati, obtusi, extus papillosi. *Achænia* (immatura) subteretia, 10-striata, glabra. *Pappi* setæ copiosæ, tenues, scabræ, albæ.—Herba, *caulibus erectis*. Folia *alterna*, *integerrima*, *subtus nivea*. Capitula *corymbosa*. Corollæ *flavæ*.

L. hypoleuca, *Benth., single species.*

Hab, N. W. America; amongst rocks, Cascade mountains, Lake Chilukweynk, *D. Lyall*.

Caules e caudice lignoso erecti, præter inflorescentiam simplices, 1–1½-pedales, laxe niveo-tomentosi. *Folia* sessilia, ovata elliptica v. ovali-lanceolata, acutiuscula v. obtusa, rigidula, 1–2-pollicaria, 3–5-nervia et eleganter venosa, supra glabra, subtus niveo-tomentosa. *Capitula* haud numerosa, confertim corymbosa, singula pedunculo 1–1½-pollicari fulta. *Involucrum* circa 4 lin. longum, bracteis ad 12 lineari-lanceolatis rigidulis. *Flores* involucro dimidio longiores. *Corollarum* lobi recurvi. *Antheræ* corolla longiores. *Achænia* glabra v. vix pilosula. *Pappus* mollis, niveus, involucro paulo longior.

Fig. 1. Involucre and receptacle, longitudinal section. 2. Floret. 3. Three of its stamens. 4. Summit of its style.

The affinities of this plant are somewhat doubtful. A. Gray, on seeing the specimens in Herb. Hook. at once pronounced it to be a distinct genus with the style of an *Inula*, the stamens, involucre, and pappus are, however, much more those of a *Senecio*; the filaments show also the peculiar dilatation or change of consistence below the anther which is much more frequent in Senecionideæ than in other tribes, although it does not appear to be generically constant even in *Senecio* itself.—G. Bentham.

Plate 1140.

GONGROTHAMNUS DIVARICATUS, *Steetz.*

Compositæ, Tribe Senecionideæ.

G. divaricatus, *Steetz in Peters, Mossamb. Bot.* 342.

Hab. E. tropical Africa; Lower valley of the river Shire, *J. Kirk, C. J. Mellor*.

Caules pluripedales, lignosi, tenues, ramis laxe divaricatis v. scandentibus, novellis cano-tomentellis mox glabratis. *Folia* alterna, petiolata, ovata v. ovato-lanceolata, acute acuminata, integra v. irregulariter dentata, basi

cuneata, 1½–3-pollicaria, triplinervia et pennivenia, supra glabra, subtus tomento minute incana. *Capitula* ad apices ramorum corymbosa. *Involucrum* circa 5 lin. longum, bracteis rigidulis acutissimis glabris v. minute ciliato-puberulis, intimis paleaceis subscariosis exterioribus gradatim brevioribus viridioribusque. *Receptaculum* foveolatum, foveolorum marginibus denticulatis. *Corollæ* flavæ, breviter exsertæ. *Pappi* setæ sordidæ, involucrum subæquantes. *Achænia* pilosula.

Fig. 1. Involucre and receptacle, longitudinal section. 2. Floret. 3. Three of its stamens, the auricles of the anthers not quite correct. 4. Summit of its style, the papillæ represented too much like hairs.

It is possible that this plant may prove to be identical with the *Vernonia solidaginifolia*, Boj. in DC., Prod. v. 30, but it is at any rate a congener; and Steetz appears to have been perfectly correct in removing it from *Vernonia* on account of its style, habit, and yellow flowers, all of which point to a much closer affinity with the Senecionideæ.—G. Bentham.

Plate 1141.

CREMANTHODIUM RENIFORME, *Benth.*

Compositæ, Tribe Senecionideæ.

Cremanthodium, *Benth. gen. nov.* *Capitula* heterogama, radiata, floribus radii fœmineis 1–seriatis discique hermaphroditis fertilibus. *Involucrum* hemisphæricum, bracteis sub–2–seriatis imbricatis membranaceis inæqualibus v. exterioribus paucis brevioribus. *Receptaculum* subplanum, foveolatum. *Corollæ* fœmineæ ligulatæ, lamina patente integra v. 3-dentata; hermaphroditæ regulares, tubulosæ, limbo cylindraceo apice 5-fido. *Antheræ* basi subintegræ v. auriculis minutis sagittatæ. *Styli* florum hermaphroditorum rami crassiusculi, plus minus complanati, obtusi, dorso papillosi. *Achænia* obtuse angulata, 5–10-striata, oblonga v. apice contracta. *Pappi* setæ copiosæ, tenues, scabræ v. barbellatæ.—Herbæ *perennes*, *foliis plerisque v. omnibus radicalibus cordato-reniformibus dentatis v. lobatis v. angustis pinnatifidisque.* Scapi 1-*cephali, aphylli v. foliis prope basin paucis alternis.* Capitula *magna, nutantia.* Corollæ *flavæ v. carneæ.*

C. reniforme, *Benth.*, foliis orbiculato-cordatis reniformibusve crenato-dentatis. *Ligularia? reniformis*, DC. Prod. vi. 315; *Senecio reniformis*, Wall. Cat. Herb. Ind. n. 3141.

Hab. Himalaya mountains at various elevations from 10,000 to 18,000 ft. West Tibet, *Falconer, Jacquemont;* Gossain Than, *Wallich;* Kumaon, *Strachey and Winterbottom;* Sikkim, *J. D. Hooker.*

Caudex crassus, brevis, perennis. *Folia* glabra, radicalia petiolo 3–8-pollicari fulta, magnitudine varia et forma nunc fere ovata et profunde cordata longiora

quam lata, nunc orbicularia v. latiora quam longa et breviter lateque cordata, in speciminibus occidentalibus interdum 3–pollicaria dentibus grossis mucronulatis, in orientalibus dimidio minora obtuse crenata, specimina tamen plurima intermedia. *Scapi* foliis multo longiores, superne sæpius plus minus pubescentes et sub capitulo glandulosi, nunc aphylli v. vagina laxa herbacea instructi, nunc infra medium folia 1–2 gerentes radicalibus conformia nisi multo minora, petiolo tenui basi in vaginam laxam dilatata. *Capitula* magnitudine fere *Arnicæ montanæ*. *Involucri* bracteæ oblongæ v. lanceolatæ, acuminatæ, semipollicares, 2–seriatæ absque bracteis exterioribus accessoriis. *Ligulæ* 15–20, ¾–1-poll. longæ, integræ. *Corollæ* disci numerosæ, involucrum vix superantes. *Antheræ* breviter exsertæ. *Achænia* glaberrima, anguste oblonga, infra medium attenuata, angulis ante maturitatem prominentibus, demum minus conspicuis. *Pappus* in forma normali albus, setis tenuibus rigidulis 1–seriatis.

Fig. 1. Floret of the ray. 2. Floret of the disk. 3. Three of its stamens.

Dr. Hooker's Sikkim collection contains also specimens of a marked variety *phæopappum*, with smaller leaves and flowers, and the pappus of a brownish colour. I can detect no other difference. The genus appears to me, both in habit and style, to be nearer to *Homogyne* than to *Senecio* or *Ligularia*. The style figured in the plate is taken from an old flower, the branches having shrunk at the extremity. When the flower first expands the style branches are of equal breadth to the end, where they are rounded without any appendages, the stigmatic series running quite to the end.—G. Bentham.

Plate 1142.

CREMANTHODIUM PALMATUM, *Benth*; and C. PINNATIFIDUM, *Benth.*

Compositæ, Tribe Senecionideæ.

C. palmatum, *Benth. sp. nov.*, foliis suborbiculatis profunde palmatim 6–12-fidis.

Hab. Sikkim Himalaya, at an elevation of 12,000 to 14,000 ft., *J. D. Hooker*.

Statura et *Capitula* speciminum minorum *C. reniformis*. *Folia* plurima, infra medium caulis longiuscule petiolata, parce pilosula; petioli basis anguste vaginata v. æqualis, lamina ½–1-poll. diametro, ad medium v. profundius inæqualiter tamen lobata. *Pappus* albus, formæ typicæ *C. reniformis*. *Corollæ* pallide carneæ.

C. pinnatifidum, *Benth. sp. nov.*; foliis oblongis profunde pinnatifidis.

Hab. Sikkim Himalaya, at an elevation of 14,000 to 15,000 feet, *J. D. Hooker*.

Scapi vix semipedales. *Folia* radicalia 1–2-pollicaria, petiolo brevi vix dilatato, lamina fere ad rhachin divisa, laciniis utrinque 5–9 oblongis interdum curvis integerrimis v. uno latere 1–2-dentatis 2–4 lin longis; caulina prope basin scapi pauca v. 0, dum adsint interdum radicalibus majora, petiolo basi in vaginam latissimam dilatato, v. folium interdum ad vaginam solam reductum. *Capitula* et flores omnino *C. reniformis*.—G. Bentham.

Plate 1143.

THESPIDIUM BASIFLORUM, *F. Muell.*

Compositæ, Tribe Inuloideæ Plucheineæ.

T. basiflorum, *F. Muell.*; *Benth. Fl. Austral.*, iii., 534.—*Pluchea basiflora*, F. Muell. Rep. Babb. Exped. 12.

Hab. Tropical Australia; islands of the Gulf of Carpentaria, *R. Brown*; Port Essington, *Armstrong*; Upper Gilbert River, *F. Mueller*.

Caules e basi dense cæspitosa numerosi, rigidi, diffusi v. ascendentes, uti folia et involucra pubescentes v. hirsuti, plerique semipedales v. rarius subpedales. *Folia* alterna, subsessilia, rigida, linearia v. lineari-lanceolata, mucronato-acuta, integra v. acute paucidentata, rarius pollicem excedentia, basi longiuscule contracta. *Capitula* anguste ovoidea, 3–4 lin longa, ad axillas sessilia, superiora solitaria distantia, inferiora per 2–4 in axillis aggregata, et prope basin caulium more specierum quarumdam *Lepidagathis* densissime conferta. *Flores* fœminei numerosi, hermaphroditi in disco solitarii v. pauci. *Corollæ* et *pappus* involucro breviores. *Achænia* pilis glochidiatis hispida.

Fig. 1. Receptacle and involucre, longitudinal section. 2. Female floret. 3. Hermaphrodite floret. 4. Three of its stamens. 5. Achene and pappus. 6. One palea of the pappus.

This plant is chiefly remarkable for its habit. In essential characters it is nearly allied to *Pluchea*, from which it is technically distinguished by the pappus and inflorescence.—G. Bentham.

Plate 1144.

ADELOSTIGMA SENEGALENSIS, *Benth.*

Compositæ, Tribe Asteroideæ Conyzeæ.

A. senegalensis, *Beuth. sp. nov.*; foliis breviter pinnatisectis, capitulis foliis floralibus cinctis.

Hab. Senegambia; marshy places, Fouta d'Hiallon, *Heudelot*, n. 677.

Herba annua, erecta, rigidula, subpedalis, superne parce ramosa, glabra, caule ramisque lineis elevatis v. alis angustissimis a foliis decurrentibus percursis. *Folia* linearia, acutissima, 1–2-pollicaria, segmentis tenuibus subulatis distantibus 1–2 lin. longis; summa breviora, segmentis paucis, sub capitulo conferta. *Capitula* ad apices ramorum solitaria, intra folia summa sessilia, ¾ poll. diametro. *Involucri* bracteæ a foliis floralibus gradatim diminutæ, lineares, acuminatæ, integerrimæ, exteriores parce pubescentes. *Flores* fœminei, numerosi, multiseriati, corollis tenuissimis pappo involucroque multo brevioribus, stylis longe exsertis tenuissimis filiformibus in ramos longos divisis; flores hermaphroditi solitarii v. perpauci, corollis longe angusteque tubulosis 5-dentatis. *Antheræ* basi emarginatæ v. breviter obtuseque sagittatæ, auriculis connatis. *Stylus* indivisus, obtusus, extus papillosus. *Achænia* florum fœmineorum hirtella, obtusangula, pappi setis basi leviter in annulum cohærentibus; florum disci forte sterilia.

Fig. 1. Female floret. 2. Hermaphrodite floret. 3. Three of its stamens. 4. Summit of its style.

I had long since indicated this as a new genus in Sir W. Hooker's herbarium, and alluded to it as such in the 'Niger Flora,' p. 431, but when describing it for the 'Genera Plantarum' it appeared to me closely allied to the more recently published *Adelostigma* of Steetz, from Mozambique. An inspection of Peters's original specimen, lent for the purpose by the Royal Herbarium of Berlin, has shown that the two are strictly congeners, although specifically distinct.—G. Bentham.

Plate 1145.

ASEMNANTHE PUBESCENS, *Hook, f.*

Rubiaceæ, Tribe Chiococceæ.

Asemnanthe, *Hook. in Benth. and Hook. f. Gen. Pl.* ii., 106.

Hab. Yucatan; in moist woods near Ciapas, *Linden* (n. 1264 bis).

Frutex tomentosus, ramulis gracilibus divaricatis teretibus. *Folia* 1–2-poll. longa, opposita, breviter petiolata, elliptica, obtusa v. acuta, membranacea, nervis obscuris. *Stipulæ* interpetiolares, parvæ, subulatæ. *Flores*

parvi, $\frac{1}{4}$–$\frac{1}{3}$-poll. longi, in fasciculos paucifloros axillares dispositi, flavi, breviter pedicellati, pedicello bracteolato, bracteola subulata. *Calycis* tubus minutus, ovoideus; limbus tubum longe superans, 4-partitus, segmentis lanceolatis acuminatis persistentibus. *Corolla* urceolato-tubulosa, pubescens, ore subcontracto, fauce glabra; limbi parvi lobi 4, erecto-patentes, ovati, acuti, valvati. *Stamina* 4, fundo tubi corollæ inserta, filamentis erectis barbatis; antheræ basifixæ, lineari-oblongæ, utrinque obtusæ, inclusæ. *Discus* obscurus. *Ovarium* 2-loculare; stylus filiformis, apice paulo incrassatus, stigmate obtuso exserto; ovula in loculis solitaria, ab apice pendula, oblonga, lateraliter compressa, funiculo brevissimo. *Frutus* immaturus ovoideus, pubescens, 2-locularis, loculis angustis. *Semina* desunt.

Obviously a member of the American tribe *Chiococceæ*, and closely allied to *Salzmannia* in its axillary inflorescence, tetramerous flowers, filaments united into a tube which is inserted at the base of the corolla-tube, and in the basifixed anthers; but differing widely in habit, in the calyx, structure of the style, and in the simple funicle of the ovule.—J. D. Hooker.

Fig. 1. Flower. 2. The same with the corolla laid open. 3. Vertical section of ovary. 4. Transverse section of ditto:—*all magnified.*

Plate 1146.

SYNAPTANTHA TILLÆACEA, *Hook. f.*

Rubiaceæ, Tribe Hedyotideæ.

Synaptantha, *Hook. f. in Benth. and Hook. f. Gen. Pl.* ii, 61.

S. tillæacea, *Hook. f. l. c.* Hedyotis tillæacea, *F. Muell., Fragm, Fl. Austral.* iv. 39; *Benth. Fl. Austral.* iii. 405.

Hab. Sub-tropical Australia, in plains, *Sir T. Mitchell,* No. 417 (Nov. 1846); Swan River, *Drummond,* No. 108, 4th coll.; between Darling River and Cooper's Creek, *Howitt's Expedition*; Sutton River, *Bowman*; Mackenzie River, *F. Mueller.*

Herba humilis, perennis, ramosa, basi lignosa, minutissime scaberula, ramulis erectis v. patulis teretibus siccitate sulcatis. *Folia* opposita, $\frac{1}{4}$–$\frac{1}{3}$-poll. longa, in plantis junioribus obovato-spathulatis, in senioribus linearibus rigidulis acutis, marginibus recurvis. *Stipulæ* breves, interpetiolares, membranaceæ utrinque cum foliorum basibus connatæ, persistentes, truncatæ v. 2-dentatæ. *Flores* ex albo rubescentes, solitarii v. pauci, $\frac{1}{10}$-poll. diam., pedunculati, pedunculis rigidis folio brevioribus v. paullo longioribus, 1-rarissime 3-floris, ebracteatis. *Calycis* $\frac{1}{2}$-superi tubus turbinatus; limbi lobi 4, herbacei, lineares, distantes, persistentes. *Corolla* rotata, ad basin 4-partita, glabra; segmenta vix connata, ovato-lanceolata, acuta, calycis tubo paulo longiora, valvata, marcescentia. *Stamina* 4, inter segmenta corollæ inserta,

et lateribus ovarii adnata, persistentia, filamentis filiformibus; antheræ dorso affixæ, parvæ, oblongæ. *Discus* inconspicuus. *Ovarium* $\frac{1}{2}$-superum, vertice hemispherico, 2-locularis; stylus gracilis, ramis 2 parvis linearibus divaricatis recurvis;. ovula in loculis plurima, placentis septo adnatis inserta. *Capsula* $\frac{3}{4}$-supera, latior quam longa, sepalis petalis staminibusque persistentibus circumdata, vertice late conico v. truncato 2-lobo obtuso, coriacea, 2-locularis, loculicide 2-valvis, valvis apice demum 2-fidis, oligosperma. *Semina* oblonga, obtuse angulata, facie ventrali planiuscula v. convexa inserta, testa lævi, albumine carnoso; embryo teres, cotyledonibus oblongis.

At first sight this singular little plant resembles an *Oldenlandia*, but on a closer examination proves so different from that genus that I almost doubt its affinity with it, and possibly its being rightly placed in the same tribe with it. It widely differs from the prevalent characters of Rubiaceæ in the completely 4-partite corolla, the lobes of which are scarcely perceptibly connate, and firmly adnate by a broad base to the ovary and are both persistent and marcescent. The filaments also are so firmly adherent both to the ovary and to the very base of the petals, that they are equally persistent, and it is difficult to pronounce them to be either epigynous or epipetalous, a point only determinable by the study of very young buds. These characters are very suggestive of a Gentianal alliance, and especially of one with *Mitrasacme*, but the style is single, the stipules are very conspicuous, and the insertion of the stamens is quite different.

The specimens from Drummond and from Howitt's Expedition are very small, evidently first year's, with a slender root, and spreading herbaceous branchlets, smaller broader leaves, shorter sepals and petals and a broader capsule; they may be taken for a different and annual species, but I suspect that they are seedling states.—J. D. Hooker.

Fig. 1. Flower. 2. The same laid open. 3. Fruit. 4. Vertical section of ditto. 5. Seed:—*all magnified.*

Plate 1147.

STILPNOPHYLLUM LINEATUM, *Hook. f.*

Rubiaceæ, Tribe Cinchoneæ?

Genus **Stilpnophyllum,** *Hook, f. in. Benth. and Hook. f. Gen. Pl.* ii. 33.

S. lineatum, *Hook, f. l. c.* Elæagia lineata, *Spruce, n.* 4568.

Hab. Eastern Peru, on the summit of the Cerro Pelado, near Tarapoto, *Spruce,* (*n.* 4568.)

Arbuscula ramosa, 10-pedalis (Spruce), glaberrima, 3-chotome ramosa; ramulis lignosis teretiusculis, cortice siccitate atro obtectis, ultimis obscure

4-gonis gemmisque vernicosis. *Folia* opposita, petiolata, coriacea, 3–4-poll. longa, elliptico-lanceolata, acuminata, superne castanea nitida costa depressa, nervis perplurimis divaricatis parallelis lineata, subtus pallida costa valida, nervis gracillimis; petiolo $\frac{1}{4}$–$\frac{1}{2}$-poll. longo. *Stipulæ* majusculæ, intrapetiolares, erectæ, oblongæ, obtusæ, coriaceæ, caducæ. *Flores* $\frac{1}{4}$–$\frac{1}{3}$-poll. longi, in paniculas breves terminales dispositi, brevissime pedicellati, albo-virides, minute bracteolati; paniculæ ramis oppositis crassis compressis patentibus, basi breviter bracteatis. *Calycis* tubus turbinatus; limbi brevis dentes 5, ovati, acuti, persistentes. *Corolla* infundibulari-campanulata, coriacea, tubo glabro, fauce dense villosa; limbi lobi 5, tubo paulo breviores, oblongi, obtusi, revoluti, valvati. *Stamina* 5, fauci corollæ inserta, filamentis filiformibus; antheræ dorso basi affixæ, erectæ, lineares, obtusæ, exsertæ. *Discus* conicus. *Ovarium* 2-loculare; stylus breviusculus, ramis 2 linearibus obtusis intus papillosis; ovula in loculis numerosa, placentis septo medio adnatis affixa. *Fructus* deest.

Until the fruit of this curious plant is known, its place in the Order cannot definitely be ascertained. That it is no *Elæagia* is evident from the valvate corolla-lobes, and absence of the appendages at the base of the filaments. If not belonging to Cinchoneæ proper, it must be referred to Rondeletieæ and to the neighbourhood of *Rondeletia* itself, from which it differs altogether in habit, whilst on the other hand it has all the appearance of a member of the tribe *Cinchoneæ*.—J. D. Hooker.

Fig. 1. Flower. 2. The same with the corolla laid open. 3. Stamens. 4. Vertical section of disk and ovary:—*all magnified*.

Plate 1148.

CHALEPOPHYLLUM GUYANENSE. *Hook. f.*

Rubiaceæ, Tribe Rondeletieæ.

Chalepophyllum, *Hook. f. in Benth. and Hook. f. Gen. Pl.* ii. 50.

Hab. British Guiana, *Schomburgh*.

Frutex v. *arbor*, ramulis robustis lignosis obtuse 4-gonis, ultimis pube (exsiccata) atra brevi dense vestitis. *Folia* 1–2$\frac{1}{2}$-poll. longa, crasse coriacea, opposita, obovata, apice rotundata, in petiolum brevem crassum angustata, marginibus tenuiter recurvis, superne siccitate fuscis nitidis costa furfuracea nervisque rectis parallelis divaricatis depressis; subtus brunnea, tomento appresso vestita, inter nervos latiusculos areolata. *Stipulæ* interpetiolares, breves, latæ, subacutæ, persistentes. *Flores* $\frac{1}{2}$-poll. longi, in axillis oppositis solitarii, breviter pedicellati, pedicello 2-bracteolato, bracteolis coriaceis. *Calycis* tubus turbinatus; limbi lobi 5, inæquales, lineari-spathulati, ovati, obtusi, rigidi, persistentes. *Corolla* infundibularis, fauce villosa; limbi $\frac{1}{3}$-poll. diam. lobi 5, patentes, late oblongi, obtusi, contorti. *Stamina* 5, fauci corollæ inserta; filamentis filiformi-subulatis; antheræ dorso basi affixæ,

lineari-subulatæ, acutæ, connectivo dorso incrassato, inclusæ. *Discus* tumidus. *Ovarium* 2-loculare; stylus filiformis, glaber, ramis 2 brevibus linearibus; ovula in loculis numerosa, placentis septo medio adnatis affixa. *Capsula* ½-poll. longa, ellipsoidea, crasse crustacea, vertice inter lobos calycinos conico truncato, 2-locularis, septicide 2-valvis, polysperma. *Semina* parva, subcompressa, angulata, angulis vix in alam productis, umbilico ventrali, testa coriacea reticulata.

A very distinct plant, evidently allied to *Rondeletia*, but differing in the contorted corolla-lobes and unequal calyx-segments, as also in the solitary axillary flowers. The specimens are neither copious nor very complete, but I think that the corolla-lobes are strictly contorted. The hairs within the corolla-throat are flattened and twisted.—J. D. Hooker.

Fig. 1. Flower. 2. Ovary and calyx. 3. Corolla laid open. 4. Stamen. 5. Seeds:—*all magnified.*

Plate 1149.

LEPTOSCELA RUELLIOIDES, *Hook. f.*

Rubiaceæ, Tribe Hedyotideæ.

Leptoscela, *Hook. f. in Benth. and Hook. f. Gen. Pl.* ii. 59.

Hab. Brazil, in the province of Ilhios, *Blanchet*, n. 2399.

Herba dichotome ramosa, ramis strictis gracillimis teretibus, internodiis elongatis. *Folia* 1½–2-poll. longa, opposita, breviter petiolata, ovato-lanceolata, acuminata, membranacea, subtus pubescentia. *Stipulæ* interpetiolares, breves, membranaceæ, multisetosæ. *Flores* parvuli, gracile pedicellati, in cymas unilaterales exiles fere capillares axillares et ad dichotomias laterales dispositi, pedicellis basi setaceo bracteolatis inferioribus v. omnibus florem sessilem in axilla gerentibus, fructiferis ½-poll. longis. *Calycis* tubus turbinatus v. obconicus; limbi lobi 5, subulato-lanceolati, tubo æquilongi, persistentes. *Corolla* ¼-poll. longa, infundibularis, fauce glabra; limbi lobi 5, ovati, acuti, patentes, valvati. *Stamina* 5, fauci corollæ inserta, filamentis brevibus filiformibus; antheræ dorso affixæ, lineares, utrinque obtusæ, ½-exsertæ. *Discus* conicus. *Ovarium* 2-loculare; stylus filiformis, ramis 2 linearibus; ovula in loculis numerosa, placentis elongatis septo medio affixis inserta. *Capsula* ⅓-poll. longa, membranacea, ellipsoideo-oblonga, teres, costulata, vertice conico producto membranaceo septicide 2-valvi, valvis longe ultra calycem productis 2-fidis. *Semina* immatura numerosa, oblonga v. obovoidea, testa ut videtur fungosa.

Of this very singular plant, I have seen but two fragments, evidently the tops of a tall very slender branching and probably annual herb, quite unlike any Rubiaceous plant known to me, whether in general habit or in inflorescence. The individual racemes lengthen much (to 6–10 in.) in fruit, are almost filiform,

and bear the flowers in pairs on the side towards the axis, one flower being pedicelled, and the other sessile in the axil of the pedicel; towards the tip of each raceme the rachis usually forks and bears a flower in the fork.—J. D. Hooker.

Fig. 1. Flower. 2. Calyx, ovary, and style. 3. Corolla laid open. 4. Stamen. 5. Capsule. 6. Vertical section of the same. 7. Immature seed:—*all magnified.*

Plate 1150.

SOLENANDRA IXOROIDES, *Hook. f.*

Rubiaceæ, Tribe Cinchoneæ.

Solenandra, *Hook. f. in Benth. and Hook. f. Gen. Pl.* ii. 43.

Hab. Island of Cuba, *Don Ramon de la Sagra* (communicated by *M. Franqueville*).

Arbor v. *frutex* glaberrimus, habitu *Ixoræ*, ramulis adscendentibus lignosis teretibus, cortice fusco lenticulis consperso. *Folia* $1\frac{1}{2}$–1 poll. lata, opposita, late elliptica v. fere orbicularia, obtusa, coriacea, supra nitida, exsiccatione atro-fusca, subtus pallida, opaca; nervis paucis patentibus arcuatis, inter nervos reticulata; petiolo $\frac{1}{3}$–$\frac{1}{4}$ poll. longo. *Stipulæ* intrapetiolares, parvæ, obtusæ, deciduæ. *Corymbi* terminales, 3-chotome ramosi, ramulis puberulis patentibus gracilibus teretibus multifloris, primariis basi foliatis, ceteris basi bractea minuta subulata suffultis. *Flores* conferti, erecti, $\frac{1}{3}$ poll. longi, breviter pedicellati, bracteolis minutis v. 0. *Calycis* tubus parvus, ovoideus; limbus 5-dentatus. *Corolla* hypocraterimorpha, tubo $\frac{1}{3}$ poll. longo gracili intus glaberrimo; limbi $\frac{1}{4}$ poll. diam. lobi 5, oblongi, imbricati, lobis 2 exterioribus. *Stamina* 5, filamentis infra medium in tubum gracilem ima basi corollæ tubi insertum (fere epigynum) connatis, superne liberis; antheræ basifixæ, lineares, obtusæ, erectæ, exsertæ. *Discus* inconspicuus. *Ovarium* 2-loculare; stylus filiformis, stigmate capitellato; ovula in loculis pauca (6–8), a dorso compressa, placentis supra medium septi affixis pendulis inserta. *Fructus* deest.

In general appearance this plant resembles an *Ixora*, but is clearly polyspermous, and in the absence of ripe seeds I refer it with little hesitation to the tribe Cinchoneæ, where it ranges naturally enough near *Exostemma*, differing from it, and indeed from most of the Order, in the filaments being connate below, as in *Capirona* and *Monadelphanthus*, and inserted so near the base of the corolla-tube as to be all but epigynous, as in *Chiococca* and other members of the tribe Chiococceæ. Some fruits, which accompanied the specimen, evidently belong to another plant, being drupes with 2-celled putamens and solitary seeds.—J. D. Hooker.

Fig. 1. Flower. 2. Ovary, style, and stigma. 3. Stamen. 4. Vertical section of ovary. 5. Ovule: *magnified.*

Plate 1151.

HEKISTOCARPA MINUTIFLORA, *Hook. f.*

Rubiaceæ, Tribe Hedyotideæ.

Hekistocarpa, *Hook. f. in Benth. and Hook. f. Gen. Pl.* ii. 62.

H. minutiflora, *Hook. f.*, species unica.

Hab. Western tropical Africa, mouths of the Old Calabar river, *G. Mann* (Feb. 1863).

Herba 4–5-pedalis, substrigoso-pilosa, annua, caulibus gracilibus cylindraceis elongatis. *Folia* 3–4 poll. longa, opposita, tenuiter membranacea, elliptico-lanceolata, in petiolum brevem gracilem angustata, acuminata, utrinque sparse strigillosa. *Stipulæ* interpetiolares, ovato-lanceolatæ, herbaceæ, reflexæ. *Flores* minuti, $\frac{1}{12}$ poll. longi, in ramis gracillimis cymæ dichotomæ axillaris secundi, approximati, sessiles v. brevissime pedicellati, pedicellis bracteolis minimis subulatis suffultis. *Calycis* tubus oblongus, dentes 5, persistentes. *Corolla* infundibularis, tubo intus glabro, fauce pilosa; limbi lobi 5, late ovati, obtusi, reduplicatim valvati. *Stamina* 5, tubo corollæ inserta, inclusa; antheræ sessiles, oblongæ, obtusæ. *Discus* cupularis. *Ovarium* 2-loculare; stylus gracilis, ramis 2 spathulatis divaricatis; ovula in loculis numerosa, 1-seriata, placentis filiformibus septo longitudinaliter adnatis inserta adscendentia. *Capsula* minuta, crustacea, lineari-oblonga, utrinque obtusa, septo contrarie compressa; septicide in coccos 2 tarde dehiscentes partibilis, oligosperma. *Semina* minuta, 1-seriata, subglobosa, obtuse angulata, testa crassiuscula foveolata, albumine parco; embryo clavatus, 2-fidus.

A Hedyotideous herb, apparently annual, differing much in habit from its congeners, though approaching in inflorescence to *Leptoscela* (tab. 1149), *Spiradiclis*, *Ophiorhiza*, and other genera of *Hedyotideæ* with scorpioid cymes. The capsule is almost indehiscent, and the ovule and seeds seem to be regularly uniseriate in each cell.—J. D. Hooker.

Fig. 1. Bud (æstivation incorrectly represented). 2. Flower, bracteole, and portion of rachis of cyme. 3. Corolla laid open. 4. Stamens. 5. Vertical section of ovary. 6. Capsule. 7. Seed. 8. Embryo:—*all magnified.*

Plate 1152.

SALMEOPSIS CLAUSSENII, *Benth.*

Compositæ, Tribe Helianthoideæ Verbesineæ.

Salmeopsis, *Benth. in Benth. et Hook. Gen. Pl.* ii. 381.

S. Claussenii, *Benth. sp. unica.*

Hab. Brazil, prov. Minas Geraes, *Claussen.*

Frutex videtur, forte subscandens, glaber v. minute scaberulus. *Rami* adsunt pedales subteretes. *Folia* opposita, per paria distantia, breviter petiolata, ovata v. late ovato-lanceolata, acuminata, 2–3 poll. longa, 1 -1½ poll. lata, brevissime et distanter dentata interdum inter dentes leviter sinuata, utrinque viridia, 3-nervia irregulariter pennivenia et subreticulata, nervis venisque subtus prominulis supra impressis, supra nitidula. *Corymbus* inter foliorum par supremum aphyllus, a basi trichotome ramosus, ramis primariis 2–4-pollicaribus ultimis brevissimis. *Bracteæ* sub ramulis corymbi parvæ, acutæ. *Capitula* 3–4 lin. diametro, apice subplana, receptaculi paleis corollisque involucra vix superantibus. *Involucri* bracteæ minute puberulæ, margine ciliolatæ.

This plant has apparently the habit and several of the characters of the West Indian and Mexican genus *Salmea*, but the pappus is nearer to that of *Viguiera*.—G. Bentham.

Fig. 1. Flowerhead without the flower, longitudinal section, showing the receptacle and paleæ. 2. Floret. 3. Palea of the receptacle. 4. One awn and the intermediate squameliæ of the pappus. 5. Three of the stamens. 6. Upper portion of the style

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Plate 1153.

OTOPAPPUS VERBESINOIDES, *Benth.*

Compositæ, Tribe Helianthoideæ Verbesineæ.

Otopappus, *Benth. in Benth. et Hook. Gen. Pl.* ii. 380.

O. verbesinoides, *Benth. sp. unica.*

Hab. Chontales in Nicaragua, *Seemann, Tate.*

Herba? v. *suffrutex*? ut videtur erectus, siccitate nigricans, pilis brevibus rigidis appressis conspersus. *Folia* breviter petiolata, ovato- v. oblongo-lanceolata, acuminata, remote dentata, 3–5-pollicaria, supra nitidula scabrinscula, pinnatim paucivenia. *Pedunculi* in axillis superioribus

laxe 3–5-cephali, tenues, foliis multo breviores. *Involucra* late campanulata v. subhemisphærica, 4–5 lin. diametro. *Bracteæ* pauciseriatæ, intimæ erectæ striatæ in paleas receptaculi abeuntes, exteriores breviores apice herbaceo patentes. *Flores* radii 6–8, ligulis angustis $2\frac{1}{2}$–3 lin. longis; disci involucro longiores, limbo cylindraceo demum recurvo. *Achænia* angusta, nigra, ad 2 lin. longa, a latere compressa, angulis 2 acutis, superiore rarius etiam inferiore pappo decurrente anguste alato. *Pappus* latere interiore in aristam productus sæpe lineam longam dorso ala in achænio decurrente appendiculatam, cæterum breviter paleaceus, lacero-dentatus, rarius latere exteriore in aristam brevem productus.—G. Bentham.

Fig. 1. Floret of the ray. 2. Summit of its style. 3. Floret of the disk. 4. Three of its anthers. 5. Summit of its style.

Plate 1154.

HYMENOSTEPHIUM MEXICANUM, *Benth.*

Compositæ, Tribe Helianthoideæ Verbesineæ.

Hymenostephium, *Benth. in Benth. et Hook. Gen. Pl.* ii. 382.

H. mexicanum, *Benth.*, foliis ovatis acutis serratis, corymbo basi foliato, pappi squamellis majoribus latitudine achænii multo brevioribus.

Hab. Mexico, Cordova Valley, *Bourgeau, n.* 1932.

Herba? v. *suffrutex*? glaber v. apice minute cano-puberulus, caule erecto ramoso haud crasso, apex florifer in speciminibus ultrapedalis. *Folia* opposita, per paria distantia, summa floralia alterna, petiolo $\frac{1}{4}$–$\frac{1}{2}$-pollicari fulta, ovata, acute acuminata et inæqualiter serrata, majora 2–3-pollicaria membranacea tri–quintuplinervia, floralia ad basin pedunculorum minora. *Pedunculi* in axillis superioribus foliis paullo longiores, singuli corymbo laxiusculo pleiocephalo terminati, inflorescentia tota laxe corymboso-paniculata basi foliata; pedunculi ultimi breves filiformes. *Involucra* haud late campanulata, vix 3 lin. longa, bracteis pauciseriatis imbricatis acutis striatis, exterioribus gradatim brevioribus. *Receptaculi* paleæ bracteis involucri similes nisi gradatim tenuiores floresque amplectentes. *Flores* radii 8–10, neutri, lamina flava patente subintegra ad 2 lin. longa; disci plurimi involucro paullo longiores, tubo vero brevissimo, limbo tubuloso apice breviter 5-fido. *Achænia* a latere compressa, nigra, parce pilosula. *Pappi* squamellæ minimæ denticulatæ, 2 paullo majores, 1–2 minimis sæpius utrinque interpositis.

The second species of this genus from New Grenada, *Linden, n.* 1393, mentioned in the *Genera Plantarum*, may be thus characterised:—

H. angustifolium, *Benth.*, suffruticosum, foliis lineari-lanceolatis subdentatis, corymbis longe pedunculatis, pappi squamellis majoribus latitudine achænii sublongioribus.—*Caules* basi lignosi ramosi, ramis erectis superne foliisque novellis tenuiter canescentibus. *Folia* omnia opposita, in petiolum contracta, 1–2-pollicaria. *Pedunculi* corymbiferi foliis 2–3-plo longiores. *Involucra* et flores *H. mexicani*. *Pappi* squamellæ hyalinæ, latiusculæ, lacero-dentatæ, majores fere $\frac{3}{4}$ lin. longæ.—G. Bentham.

Fig. 1. Floret of the ray. 2. Floret of the disk. 3. Summit of its style. 4. Achene.

Plate 1155.

GYMNOPENTZIA BIFURCATA, *Benth.*

Compositæ, Tribe Anthemideæ Taxaceteæ.

Gymnopentzia, *Benth. in Benth. et Hook. Gen. Pl.* ii. 537.

G. bifurcata, *Benth. l.c.*, species unica.

Hab. Damp rocks to the west of Mount Boschberg, in the Diamond district, South Africa. *Macowan.*

Frutex habitu fere *Athanasiæ*, glaber v. pilis raris reflexis pubescens et partes juniores interdum subcanescentes; rami virgati, fastigiati, dense foliati. *Folia* opposita, basi subconnata, ad axillas sæpe fasciculata, anguste linearia, crassiuscula, sulcata, majora $\frac{1}{2}$ poll. longa, pleraque apice bifurca v. ad medium biloba, cæterum integerrima. *Capitula* parva, ad apices ramorum confertim corymbosa. *Pedunculi* $\frac{1}{4}$–$\frac{1}{2}$-pollicares, medio sæpius bibracteati. *Involucrum* latiuscule campanulatum, 2 lin. longum; bracteæ 3–4-seriatæ, oblongæ, appressæ, apice scarioso-marginatæ v. sphacelatæ, obtusæ, exteriores gradatim breviores. *Flores* involucrum breviter superantes. *Corollæ* tubus cum ovario subcontinuus, minute papillosus, limbo parum ampliato breviter 5-fido. *Antheræ* et stylus omnino *Anthemidearum*. *Achenia* subteretia, 12–15-costata, leviter puberula, pappo omnino deficiente.

This plant is nearly allied to the genus *Pentzia*, but the opposite leaves, almost exceptional in the tribe, and the achenes showing at least in the unripe state twelve to fifteen prominent ribs instead of five angles, induced me to establish it as a distinct genus. The forked leaves are also peculiar.—G. Bentham.

Fig. 1. Leaf. 2. Flower-head. 3. Floret. 4. Three of its anthers. 5. Summit of its style.

Plate 1156.

PLUCHEA PINNATIFIDA, *Hook. f.*

Compositæ, Tribe Inuloideæ Plucheineæ.

P. (Oligocephalum) **pinnatifida**, *Hook. f. sp. n.* fruticosa, glutinosa, foliis pinnatifidis lobis linearibus, capitulis paucis pedunculatis subcorymbosis, involucri bracteis pluriseriatis angustis.

Hab. Soumali country, East tropical Africa, *Capt. Playfair.*

Frutex ramosissimus, glutinosus, cæterum glaber, ramulis tenuibus foliosis. *Folia* ½–1-pollicaria, fere ad costam divisa in lobos paucos breviter lineares obtusos carnosulos. *Pedunculi* ad apices ramorum pauci, monocephali, ½–1-pollicares. *Involucrum* campanulatum, ad 4-lin. longum, bracteis numerosis, acutiusculis, pluriseriatis rigidulis, exterioribus gradatim brevioribus. *Receptaculum* nudum. *Flores feminei* pluriseriati; corolla tenuissima, subtridentata, pappum non excedens. *Stylus* exsertus, ramis filiformibus. *Flores hermaphroditi* in medio capitulo plures, corolla anguste tubulosa apice breviter 5-fida. *Antheræ* basi brevissime caudatæ. *Styli* rami (an semper ?) lineares, erecti, conniventes (v. connati ?). *Achænia* parva, villosula. Pappi setæ paucæ, tenues, vix serrulatæ.

The stems of this plant and of the *Iphiona rotundifolia*, Oliv. and Hiern, under the common name of *Gajaboot*, are employed medicinally by the Somalis for the cure of almost all diseases. Mr. Vaughan, who, when Port Surgeon at Aden, contributed an interesting paper on Arab drugs to the pages of the 'Pharmaceutical Journal,' describes these stems under the name *Dajaboot*, and states that they are employed by the natives in nearly every ailment, but especially for pain in the bowels, anorexia, and debility after fevers. (*D. Hanbury.*) Captain Playfair's specimens are far advanced, and not in a very good state, but the species is a very well marked one, allied only to the following *P. frutescens*.—G. Bentham.

Fig. 1. Female flower. 2. Summit of its style. 3. Bristle of its pappus. 4. Hermaphrodite flower. 5. Three of its stamens. 6. Summit of its style. 7. Inner bract of the involucrum.

Plate 1157.

PLUCHEA FRUTESCENS, *Benth.*

Compositæ, Tribe Inuloideæ Plucheineæ.

P. (Oligocephalum) **frutescens**, *Benth. sp. n.* fruticosa, ramosissima, glabra v. parce piloso-pubescens, foliis oblongo-lanceolatis obovatisve grosse dentatis v. subpinnatifidis, capitulis paucis pedunculatis subcorymbosis, involucri bracteis pluriseriatis angustis.

Hab. Scinde and Punjab. *Stocks*, *Dalzell*, *Aitcheson*, and others.

Frutex ramosissimus, prope marem carnosus, in regione interiore lignosus foliis tenuioribus (Dalzell), glaber v. pilis raris pubescens et (ex sicco) sæpe glutinosus. *Ramuli* sæpius dense foliati. *Folia* forma valde variabilia, sessilia, 1–1½ poll. longa, nunc omnia acuta angusta et grosse v. breviter paucidentata, nunc late oblonga v. obovata irregulariter subduplicato-dentata, infra medium contracta et profunde dentata v. lobata. *Capitula* ad apices ramorum haud numerosa, in corymbum simplicem folia vix excedentem disposita, pedunculis tenuibus ½–1 poll. longis. *Involucrum* campanulatum, at 4 lin. longum, bracteis acutissimis rigidulis pluriseriatis, exterioribus gradatim brevioribus. *Receptaculum* omnino nudum nec foveolatum. *Flores* numerosi; fœminei in ambitu pluriseriati; corollæ filiformes, tenuissimæ, limbo vix dilatato, sæpissime 3-dentato, stylo exserto ramis longis subulatis; hermaphroditi in centro plurimi, sæpius numerosi; corolla tenuiter tubulosa, limbo parum latiore 5-fido. *Antheræ* basi breviter caudato-auriculatæ. *Stylus* simplex, apice obtusus pilosulusque. *Achænia* parva, villosula. *Pappi* setæ tenues, haud numerosæ, breviter serrulato-barbellatæ.—G. Bentham.

Fig. 1. Female flower, but the corolla represented much too thick. 2. Summit of its style. 3. Hermaphrodite flower. 4. Three of its stamens. 5. Summit of its style. 6. Bristle of the pappus.

Plate 1158.

CYCLOPHYLLUM DEPLANCHEI, *Hook f.*

Rubiaceæ, Tribe Vanguerieæ.

Cyclophyllum, Hook. f. *in Benth. and Hook. f. Gen. Plant.* ii. 535.

C. Deplanchei, *Hook. f. l.c.*, species unica.

Hab. New Caledonia, *Deplanche*, n. 389; *E. Caldwell.*

Frutex glaberrimus, ramis teretibus lignosis nodosis, ramulis compressis obscure tetragonis, internodiis brevibus. *Folia* 1–1½ poll. diam., uniformia, decussatim opposita, sessilia v. breviter et crasse petiolata, laxe imbricata, cordato-orbicularia, apice rotundata v. apiculata, crasse coriacea, supra glaberrima nitida, subenervia, subtus exsiccatione undulato-rugulosa, costa lata superne evanida, subtripli- v. quintuplinervia, nervis valde obscuris arcuatis. *Stipulæ* latæ, cuspidatæ, tarde deciduæ, coriaceæ. *Flores* axillares, solitarii, sessiles v. brevissime pedicellati, pedicello apice minute 2-bracteolato. *Calycis* tubus ⅙ poll. longus, oblongus, teres; limbus minutus, 5-dentatus, dentibus triangularibus. *Corolla* hypocraterimorpha, coriacea, tubo ¼ poll. longo tereti puberulo, intus faucesque villoso; limbus ½–¾ poll. diam., lobis 5 ovato-lanceolatis, acuminatis, valvatis. *Stamina* 5, fauce corollæ inclusa, apicibus exsertis, filamentis brevissimis; antheræ basifixæ, linearioblongæ, acuminatæ, loculis basi rotundatis v. paullo divergentibus. *Discus* obscurus. *Ovarium* 2-loculare, crassum, loculis parvis; stylus gracilis, teres, stigmate exserto clavato turbinato vertice dilatato breviter 2-lobo; ovula in loculis solitaria, paullo infra apicem pendula, brevia, funiculo basi incrassato. *Fructus* ignotus.

First communicated to the Kew Herbarium by the late Mr. Lenormand of Vire, and subsequently by E. Caldwell, who during a mission from Mauritius to obtain the New Caledonian varieties of sugar-cane, formed a valuable collection of plants, which he had the goodness to transmit to me. The valvate æstivation of the corolla, and solitary ovules suspended from near the apex of the cells, places it unquestionably in *Vanguerieæ*, but it is not closely allied to any genus of that tribe. Its resemblance to *Ixora* is manifest, but superficial.—J. D. Hooker.

Fig. 1. Flower. 2. Upper portion of tube and limb of corolla laid open. 3. Back and front view of stamens. 4. Vertical section of ovary, with style and stigma. 5. Transverse section of ovary:—*all magnified.*

PLATE 1159.

NOTOPORA SCHOMBURGKIANA, *Hook. f.*

Nat. Ord. ERICEÆ, Tribe VACCINIEÆ.

Notopora, *Hook. f. gen. nov.* *Calycis* tomentosi tubus subglobosus ovario adnatus; limbus ultra ovarium productus, cylindraceus; lobi 5, subæquales, ovato-triangulares, obtusi. *Corolla* brevis, tubulosa, subinflata, tomentosa, apice 5-loba, lobis triangulari-ovatis obtusis valvatis. *Stamina* 10, inclusa, tubo corollæ inserta, filamentis distinctis antheris multo brevioribus complanatis glabris; antheræ longe supra medium filamento insertæ, lineari-oblongæ, subquadratæ, cartilagineæ; loculi granulosi, in tubulos breves rigidos rectos connatos dorso sub apice rimis dehiscentes producti. *Discus* annularis, medio depressus, molliter setosus. *Ovarium* crassum, 5-loculare; stylus filiformis, exsertus, stigmate capitulato; ovula in loculis numerosa, placentis parvis globosis angulo interiore loculi adnatis inserta. Fructus . . . . Frutex *ramis lignosis teretibus*. Folia *alterna breviter petiolata elliptico-ovata, sublonge acuminata, integerrima, crasse rigide coriacea, obscure penninervia, supra glabra, nitida, subtus appresse tomentosa rufa v. alba.* Flores *inter majores, axillares, solitarii v. pauci, breviter pedicellati, dense ferrugineo-tomentosi, pedicello crasso basi bracteato infra florem 2-bracteolato.*

N. Schomburgkii, *Hook. f.*, species unica.

HAB. British Guiana, *Schomburgk*, Nos. 566 (867), 567, 1038.

Frutex valde ramosus, ramulis crassitie pennæ corvinæ, cortice atrofusco minute pustulato. *Folia* $2\frac{1}{2}$–3-pollicaria, valde rigida, basi acuta, marginibus non recurvis, indumento paginæ inferioris laxo v. appresso. *Flores* $\frac{3}{4}$ poll. longi.

This is the only species of the whole tribe of *Vaccinieæ* in which the stamens are actually inserted high up on the tube of the corolla; in all others, when there is an adhesion, this is rather a mere slight union between the base of the filament and that of the corolla-tube. I know of no genus to which this is at all allied, and Schomburgk's tickets give no information respecting it.—J. D. HOOKER.

Fig. 1. Flower and bracteoles. 2. Corolla laid open. 3. Back and front view of stamens. 4. Vertical section of ovary, with style. 5. Transverse action of ovary: *all magnified.*

Plate 1160.

RIGIOLEPIS BORNEENSIS, *Hook. f.*

Nat. Ord. Ericeæ, Tribe Vaccinieæ.

Rigiolepis, *Hook. f. gen. nov. Calycis* limbus ovario adnatus, obconicus, lobis 5 ovatis acutis rigide chartaceis striato-nervosis. *Corolla* urceolata, fere globosa, 5 dentata, dentibus erectis leviter imbricatis. *Stamina* 10, corolla breviora, filamentis basi tubi læviter adnatis brevibus complanatis; antheræ erectæ, tubulis brevibus loculis æquilatis rimis magnis hiantibus antice dehiscentibus, connectivo dorso 2-aristato. *Discus* tumidus, annularis, pubescens. *Ovarium* 10-loculare, septis tenuissimis; stylus columnaris, 5-gonus, superne paullo incrassatus, stigmate truncato simplici; ovula in loculis solitaria, angulo interiori placentis inconspicuis affixa, hilo ventrali. *Fructus* . . . Frutex *epiphyticus, ramulis teretibus, petiolis et inflorescentia subtus patentim pubescentibus.* Folia *disticha breviter petiolata, alterna, ampla, breviter petiolata, elliptica v. oblongo-lanceolata, acuminata, integerrima, valide 5-plinervia supra nitida, nervis depressis, subtus reticulatim-venosa inter nervos glaberrima.* Flores *minuti in racemulos breves alares et extra-alares dispositi, bracteati et 2-bibracteolati; bracteæ ovatæ concavæ, rigide chartaceæ, striato-nervosæ, flores sæpe excedentes, demum deciduæ; bracteolæ consimiles sed minores, oppositæ.*

R. borneensis, *Hook f.*, species unica.

Hab. Borneo, at Sarawak, *Lobb.*

Frutex epiphyticus, 5–10-pedalis, rigidus, fuscescens; ramulis lignosis flexuosis, cortice pustulato. *Folia* 5–7 poll. longa, subcaudato-acuminata, basi subobliqua acuta, 5-tupuli-costata, supra nitida nervis insigniter depressis, subtus polita nervis valde elevatis, inter nervulos arcuatos creberrime reticulatim nervulosa, petiolo $\frac{1}{6}$-poll. longo, tereti, crasso, tomentello. *Racemi* 1–1$\frac{1}{2}$-poll. longi, longe supra-axillares, erecto-patentes, sessiles, puberuli, bracteis caducis imbricati. *Flores* ratione tribus minimi, nutantes. *Calycis* lobi subacuti, ciliolati. *Corolla* vix 1$\frac{1}{2}$-poll. longa. *Ovarium* (difficillime scrutatum) ni fallor 10-loculare, sed forsan 5-loculare loculis 2-ovulatis.

An exceedingly curious plant, quite unlike any other of the tribe, so much so that it was not till fully analysed that I could persuade myself of its really being Vacciniaceous. Though strictly according with this tribe, the colour and texture of the Melastomaceous-like leaf, the curious little extra-axillary racemes, chartaceous imbricating bracts, almost concealing the very minute flowers, all combine to mark its affinities, which are technically with *Gaylussacia*.—J. D. Hooker.

Fig. 1. Flower and bracteoles. 2. Back and front view of stamens. 3. Vertical section of ovary and calyx with style. 4. Transverse section of ovary: *all magnified.*

Plate 1161.

GUTHRIEA CAPENSIS, *H. Bolus.*

Passifloreæ, Tribe Acharieæ.

Guthriea, *Bolus, gen. nov.* *Flores* regulares monoici. Mas.: *Calycis* tubus 0, segmenta 5 a basi vel fere a basi distincta, linearia, ad mediam corollæ adnata, tubum ejusdem superantia. *Corolla* herbacea, venulosa, marcescentia, infundibuli-campanulata, 5-fida; lobis ovato-rotundatis, obtusis, reflexis. *Stamina* 5 ad faucem corollæ inserta, lobis alternantia; filamenta subfiliformia complanata; antheræ exsertæ biloculares ad connectivum crassum adnatæ, introrsæ. Fœm.: Calyx maris, segmenta autem corolla dimidio breviora. *Corolla* campanulata breviter et obtuse 5-loba, lobis erectis. Glandes in utroque sexu 5, ad basin corollæ insertæ. *Ovarium* sessile, 1-loculare, multiovulatum; ovula 10–15 a placentis parietalibus 5 pendentia; styli 5 coaliti erecti; stigmata 5 brevia, acuta, canaliculata. *Capsula* inclusa, ellipsoidea, 1-locularis, in valvulis 5 loculicide dehiscens, 8–10-sperma. *Semina* ellipsoidea, testa crustacea brunneo-nigra foveolata, arillo albo tecta; embryo recta in axe albuminis copiosi immersa; radicula supera ad hilum spectans; cotyledones planoconvexæ.

G. capensis, *H. Bolus*, species unica.

Hab. High mountains with a south to east aspect, near Graaff Reinet, Cape Colony; 4500 to 7000 ft. Fl. April.

Herba acaulis glabra; rhizoma subhorizontalis radices crassiusculas carnosas emittens. Folia radicalia numerosa rosulata petiolata cordato-ovata obtusa crenata, subtus albescentia et conspicue reticulatim venosa; lamina $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa 2–$2\frac{3}{4}$ poll. lata; petioli crassiusculi semiteretes 1–5 poll. longi. Flores axillares pedunculati, pedunculis folio brevioribus.

This plant, which I have already detected in several localities on the Sneeuwberg Mts.—from 4500 ft. on the Oudeberg to 7000 ft. on the Gnadouw Mt. (and on the latter abundant)—seems to have escaped the notice of previous collectors. It comes very near to Acharia of Thunberg, which, however, I only know from description. It forms another member of a group of small genera having their head-quarters in South Africa, which have been placed by Mr. Bentham and Dr. Hooker (*Gen. Plant.* i. p. 814) in Passifloreæ; but which were ranged by Lindley with Papayaceæ between Cucurbitaceæ and Passifloreæ—an arrangement which Dr. Masters (*Flor. Trop.* Africa, ii. 504) thinks should stand.[1]

[1] This plant offers some points of curious analogy with certain species of Villarsia (Gentianeæ).

I have dedicated the genus to my friend Francis Guthrie, Esq., LL.B., Professor of Mathematics, Graff Reinet College, my earliest teacher in botany, and companion in many botanical expeditions; and whose name may be fitly associated with the plant of a district to which he has rendered invaluable educational services.—H. Bolus.

Fig. 1. Male flower laid open. 2. Female flower. 3. Transverse section of ovary. 4. Capsule with persistent style and corolla. 5. Seed. 6. Same longitudinally cut through.

Plate 1162.

PLAGIOCARPUS AXILLARIS, *Benth.*

Leguminosæ, Tribe Galegeæ?

Plagiocarpus, *Benth. gen. nov. Calycis* lobi 5, æquales, tubo longiores. *Petala* breviter unguiculata, subæquilonga. *Vexillum* late ovatum, basi late subcordatum. *Alæ* liberæ, oblongæ, basi conspicue hinc auriculatæ. *Carina* oblonga, apice obtuso breviter incurvo, petalis basi vix auriculatis. *Stamina* omnia in vaginam supra fissam connata, antheræ subæquales alternæ basifixæ, alternæ versatiles. *Ovarium* subsessile, 1- (v. 2- ?) ovulatum; stylus filiformis, glaber, stigmate minuto terminatus. *Legumen* oblique ovatum, turgidulum, valvis coriaceis. *Semen* unicum, ovoideum, strophiolatum. *Suffrutex.* Foliola 3-foliata. *Flores* axillares solitarii.

P. axillaris, *Benth. sp. nov. unica.*

Hab. Tropical Australia, Regent's River, Greville Island, &c., north-west coast, *A. Cunningham*; Port Darwin, *Schultz*, n. 639.

Caules e rhizomate v. basi crassa lignosa erecti, ramosi, foliosi, pedales v. longiores, tenues at duri, pilis appressis mollibus canescentes v. rufescentes. *Stipulæ* vix conspicuæ, inter pilos occultæ v. omnino nullæ. *Foliola* 3 in caule sessilia, petiolo communi nullo, oblongo-elliptica, obtusa, 6–9 lin. longa, membranacea, utrinque pallide virentia, tenuiter pubescentia, pennivenia; versus basin caulium sæpe solitaria. *Flores* in axillis subsessiles, pedicellis nempe brevissimis sericeis, bracteolas 2 minimas ferentibus. *Calyx* $2\frac{1}{2}$-lin. longus, sericeo-villosulus, lobis acutis tubo paullo longioribus. *Petala* ad 4 lin. longa; alæ more Genistearum transverse rugulosæ. *Legumen* semipollicare, valde obliquum, valvis duris nitidis.

I had long known this plant in Cunningham's collections, and could not refer it to any known genus, but was unable to characterise it for

want of the flowers, which we have now received in Schultz's rich Port Darwin collections. The place, however, in the system is uncertain. The foliage and some other characters indicate an affinity with *Argyrolobium*, but the staminal tube, open along the upper side, is at variance with all Genisteæ.—G. Bentham.

Fig. 1. Flower. 2. Vexillum. 3. One of the wings. 4. Carina. 5. Stamens. 6 and 7. Anthers of the two heads. 8. Pistil. 9. Fruit.

Plate 1163.

BOLUSIA CAPENSIS, *Benth.*

Leguminosæ, Tribe Galegeæ.

Bolusia, *Benth. gen. nov.* Calycis profunde 5-fidi lobi subæquilongi, 2 superioribus latioribus approximatis. *Vexillum* latissimum, emarginatum; alæ falcato-obovatæ, liberæ; carina longe linearis, cum genitalibus spiraliter contorta. *Stamen* vexillare liberum; cætera breviter in vaginam supra fissam connata; antheræ alternæ filamentis abbreviatis elongato-linearcs basifixæ, alternæ filamentis multo longiores oblongo-ellipticæ dorsifixæ. *Ovarium* sessile, pluriovulatum. *Stylus* glaber, stigmate terminali capitato. *Legumen* oblongum, turgidum, polyspermum. *Herba* perennis v. suffrutex multicaulis, sericeo-pubescens. *Folia* 1- rarius 3-foliolata. *Pedunculi* oppositifolii uniflori.

B. capensis, *Benth.*, species unica.

Hab. South Africa, between Kuruman and Vaal rivers, on the borders of the Kalahari desert. *J. Cruikshank* (communicated by *H. Bolus*).

Caules e basi perenni v. breviter lignosa plures, erecti v. adscendentes, parce ramosi, 1–1½-pedales, appresse sericeo-villosi. *Foliorum* petiolus 2–4 lin. longus, foliolum sæpius unicum, lanceolatum v. fere lineare, 1–2 poll. longum, supra glabrum v. pilis perpaucis conspersum, marginibus nerviformibus ciliatis, subtus appresse sericeo-pilosum; adsunt etiam rarius foliola 2 lateralia multo minora, ad apicem (v. paullo infra apicem ?) petioli affixa. *Stipulæ* oblique cordato-lanceolatæ, acutissimæ, petiolo paullo v. dimidio breviores. *Pedunculi* sæpius semipollice breviores, primum terminales, mox gemma excrescente oppositifolii, sub calyce bibracteolati. *Calyx* ad 3 lin. longus. *Petala* breviter unguiculata. *Vexillum* calyce paullo longius, longitudine fere duplo latius, concavum, linea mediana dorsali pilosum, cæterum glaberrimum. *Alæ* late falcato-obovatæ, obtusæ, vexillo sublongiores. *Carina*

gyro triplici contorta, petalis ima basi liberis, cæterum in tubum clausum connatis. *Genitalia* inclusa (v. styli apex demum brevissime exsertum ?). *Legumen* in speciminibus adhuc immaturum, 10–11 lin. longum 3–4 lin. diametro, glaberrimum.

The affinities of this interesting plant appear to be the nearest with *Sylitra*. The aspect and calyx are those of an *Argyrolobium*, the pod that of a *Crotalaria*, and the spiral carina, which had induced Mr. Bolus to place it in *Phaseolus*, occurs here and there in various tribes of Papilionaceæ.

Fig. 1. Flower. 2. Calyx and pistil. 3. Vexillum. 4. One of the wings. 5. Carina. 6. Stamens. 7. An anther of each description.

Plate 1164.

KOOMPASSIA MALACCENSIS, *Maing.*

Leguminosæ Cæsalpinieæ, Tribe Cassieæ.

Koompassia, *Maing. gen. nov.* *Calycis* tubus discifer subnullus ; segmenta 5, subvalvata, herbacea, crassiuscula. *Petala* 5 subæqualia. *Stamina* 5, filamentis brevissime filiformibus, antheræ ovatæ, basifixæ ; loculis longitudinaliter dehiscentibus. *Ovarium* sessile, 1-ovulatum. *Stylus* brevissime subulatus, stigmate terminali parvo. *Legumen* oblongum, compressum, ala cinctum, indehiscens. *Semen* 1, plano-compressum, exalbuminosum ; cotyledones planæ, foliaceæ ; radicula brevis, recta.—Arbor. Folia impari pinnata, foliolis alternis. Flores parvi, cymulosi, cymulis in paniculas axillares v. terminales dispositis.

K. malaccensis, *Maing.*, species unica.

Hab. **Malacca,** *Maingay.*

Arbor prælta. Partes novellæ et inflorescentia pube tenuissima ferrugineæ, rami et folia adulta glabri. *Stipulæ* desunt. *Foliorum* petiolus communis 3–5-lin. longus. *Foliola* 5–7, alterna, petiolulata, ovato-lanceolata v. oblonga, acuminata, demum coriacea, nitidula, tenuiter pennivenia et sub lente supra crebre foveolato-reticulata, subtus opaca et pallidiora, in speciminibus floridis et fructus juniores ferentibus ad 2 poll. longa, in specimine fructu maturo duplo majora. *Paniculæ* in axillis superioribus et ad apices ramorum thyrsoideæ, floribundæ, foliis breviores, rhachi pedicellis calycibusque ferrugineo-puberulis. *Bracteæ* minutissimæ raræque. *Pedicelli* 1–2 lin. longi. *Calycis* segmenta

crassiuscula ad $\frac{3}{4}$ lin. longa. *Petala* glabra, fere lineam longa, oblonga v. obovali-oblonga, basi parum contracta, marginibus æstivatione subinvolutis, apice crispula. *Stamina* petalis dimidio breviora, filamentis etsi filiformia vix $\frac{1}{4}$ lin. longis. *Antherarum* connectivum crassiusculum, loculis marginalibus. *Ovarium* petalis multo brevius, subglobosum, pubescens. *Stylus* brevissimus, tenuis, glaber. *Legumen* maturum cum ala 4–5 poll. longum, medio 1–1$\frac{1}{2}$ poll. latum, prope basin multo angustius et sæpissime tortum, obscure reticulatum, ala coriacea ultra loculum longiuscule producta. *Semen* plano-compressum, 'testa coriacea, nitida. Albumen 0. Cotyledones carnoso-foliaceæ 5-nerves transverse reticulatæ ad 15 lin. longæ, 6 lin. latæ, radicula supera recta brevi' (*Maingay*). Semina ipse non vidi.

The nearest affinity of this tree is evidently with *Dialium*, from which it differs in the more valvate calyx, the stamens and petals forming normal whorls of five, instead of being reduced to two or fewer, and in the shape of the fruit.

The drawings are taken from Maingay's specimens, distributed under n. 604, in flower with young fruit, but of which he describes the ripe fruit. Another specimen of his, n. 557, has the ripe fruit he describes, but with the leaflets twice the size of those of the other specimens; yet they all probably belong to the same species.—G. Bentham.

Fig. 1. Flower. 2. One of the petals. 3. One of the stamens (the filament very incorrectly drawn). 4. Ovary. 5. The same, longitudinal section. 6. Young fruit.

Plate 1165.

ACACIA RENIFORMIS, *Benth.*

Leguminosæ, Suborder Mimoseæ.

A. (Vulgares) **reniformis**, *Benth. sp. n.*, glabra, aculeis sparsis, pinnis 1–2-jugis, foliolis 1-jugis oblique orbiculato-subreniformibus, tenuiter coriaceis, spicis laxis cylindraceis, floribus glabris.

Hab. Mexico, banks of the river Mostezuma, near Las Apuntas. *Ehrenberg in Herb. Mus. Berol.*

Frutex videtur undique glaberrimus, in sicco glauco-subrubens. Aculei parvi, recti. *Stipulæ* rigidule foliaceæ, oblique reniformes, 3–5-lin. latæ, diu persistentes. *Foliorum* petiolus communis tenuis, $\frac{3}{4}$–1$\frac{1}{2}$-pollicaris, glandulis depressis inter pinnas cujusve paris instructus. *Pinnæ* dum 2-jugæ per paria distantes, rhachibus rigidulis tenuibus,

$\frac{1}{2}$–$\frac{3}{4}$-pollicaribus. *Foliola* oblique orbiculata, subdimidiata v. fere reniformia 1–$1\frac{1}{2}$ poll. lata, obtusissima, tenuiter at rigide coriacea, flabellato-plurinervia et subreticulato-venulosa, utrinque glaucescentia. *Spicæ* in axillis superioribus v. in racemo brevi terminali sæpius geminæ, pedunculatæ, 1–$1\frac{1}{2}$-pollicares, laxe floribundæ. *Flores* glaberrimi, breviter pedicellati. *Bracteæ* minutæ. *Calyx* campanulatus, $\frac{3}{4}$ lin. longus, breviter 5-dentatus. *Corolla* late campanulata, alte 5-fida, $1\frac{1}{4}$–$1\frac{1}{2}$ lin. longa. *Stamina* numerosa, libera, corolla duplo longiora. *Ovarium* stipitatum, glabrum. *Legumen* ignotum.

I have selected this and the following species of *Acacia* for illustration as being both of them of very limited geographical range and quite exceptional in the genus as to foliage, and may, therefore, be reckoned amongst rare races in the course of extinction. I have seen only a single specimen of each.—G. Bentham.

Fig. 1. Flower. 2. The same, longitudinal section, showing the free stamens and pistil. 3. Ovary.

Plate 1166.

ACACIA CRASSIFOLIA, *A. Gray.*

Leguminosæ, Suborder Mimoseæ.

A. (Vulgares) **crassifolia,** *A. Gray, Pl. Thurb. in Mem. Amer. Acad.* v. 317, fruticosa, glaucescens, aculeis sparsis subrecurvis, pinnis unijugis, foliolis unijugis cuneato-orbiculatis crasso-coriaceis, capitulis globosis paniculatis, floribus tomentoso-canescentibus.

Hab. North America, Mexicano-Texan region, in the mountain pass of La Peña, Copahuila, *Thurber.*

Frutex 6–10-pedalis. *Ramuli* rigidi, teretes, glabri. *Aculei* validi, sparsi et hinc inde infrastipulares gemini, recurvo-patentes. *Stipulas* non vidi. *Foliorum* petiolus communis, 4 5 lin. longus, glandula infra pinnas depressa. *Pinnarum* rhaches petiolo æquilongi. *Foliola* 1–$1\frac{1}{2}$-pollicaria, sæpius latiora quam longa, apice late rotundata, basi valde inæqualia, flabellato-5–7-nervia et subreticulato-venulosa, glabra, pallide virentia v. glauca. *Panicula* rigida, parce ramosa. *Pedunculi* $\frac{1}{2}$-1-pollicares, minute puberuli, supra medium sæpe glanduliferi et obsolete 1-bracteati. *Capitula* globosa, dense multiflora. Bracteæ parvæ. *Calyx* turbinatus, late 5-dentatus, pubescens, dimidium corollæ superans. *Petala* alte connata, apice extus pubescentia. *Ovarium* breviter stipitatum, glabrum. *Legumen* ignotum.—G. Bentham.

Fig. 1. Flower. 2. The same, longitudinal section, showing the free stamens and pistil.

Plate 1167.

CALLIANDRA COLLETIOIDES, *Griseb.*

Leguminosæ, Suborder Mimoseæ.

C. colletioides, *Griseb. in Mem. Amer. Acad. ser.* 2, viii. 180, fruticosa, ramosissima, spinis stipularibus subulatis, foliis minimis, pinnis unijugis, foliolis $2\frac{1}{2}$–$3\frac{1}{2}$-jugis obovatis coriaceis, pedunculis brevissimis, floribus sericeis.

Hab. Eastern Cuba, ravines near Nouvelle Sophie, etc. *Wright*, *n.* 153.

Frutex 6–8-pedalis, ramosissimus, præter inflorescentiam subglaber, *C. hæmatommati* affinis. *Stipulæ* veræ minutissimæ, erectæ, dorso spinam rectam aciçularem 2–4-lin. longam patentem ferentes. *Foliorum* petiolus communis $\frac{1}{2}$ lin. longus, pinnarum rhaches vix longiores. *Foliola* paribus 2–3 cum unico inferiore (intimo paris infimi deficiente), 5 v. 7, ultima sæpius lineam longa, cætera minora, obovata, rigide coriacea obtusissima, glabra, reticulato-pennivenia. *Pedunculi* in axillis superioribus sæpius gemini, 1–$1\frac{1}{2}$ lin. longi, sericeo-pubescentes. *Capitula* globosa 6–10-flora. *Bracteæ* minutæ, latæ. *Flores* sessiles. *Calyx* campanulatus, striato-multinervis, breviter 5-dentatus, vix semilinea longior, fere glaber. *Corolla* 2 lin. longa, sericeo-villosa. *Stamina* punicea, corolla quadruplo longiora, basi in tubum corollam subæquantem coalita. *Legumen* 1–$1\frac{1}{2}$-pollicare, acutiusculum, medio $2\frac{1}{2}$ lin. latum, supra medium longe angustatum, minute puberulum, marginibus valde incrassatis, valvis dehiscentia elastice revolutis.—G. Bentham.

Fig. 1. Flower. 2. Section of the same, showing the pistil. 3. Fruit.

Plate 1168.

PITHECOLOBIUM HYSTRIX, *Benth.*

Leguminosæ, Suborder Mimoseæ.

P. (Unguiculata) **hystrix,** *Benth.*, glabra, aculeis stipularibus rectis, pinnis unijugis, foliolis 1-jugis obovato-oblongis parvis nitidis.—Inga hystrix, *A. Rich. Fl. Cub.* i. 471. Calliandra hystrix et Pithecolobium calliandræfolium, *Griseb. Enum. Pl. Cub.* 83.

Hab. Cuba, western districts, *Wright*, *n.* 2401; near Cabana, *La Sagra.*

Frutex pluripedalis, intricato-ramosissimus, glaber; stipulæ spinescentes, tenues, rectæ, 2–3-lin. longæ. *Foliorum* petiolus communis et pinnarum rhaches tenues, ad lineam longi. *Foliola* 1–3 lin. longa, obtusissima, tenuiter coriacea, rigidula, supra nitida, subtus pallida, pennivenia. *Pedunculi* in axillis superioribus sæpius gemini, tenues, 4–6 lin. longa. *Capitula* subglobosa, 6–10-flora. *Flores* sessiles, glabri. *Bracteæ* minutæ. *Calyx* $\frac{1}{2}$–$\frac{3}{4}$ lin. longus, breviter 5-dentatus. *Corolla* rubra, tenuis, 3–3$\frac{1}{2}$ lin. longa, apice breviter 5-fida. *Stamina* pallide purpurea, corolla plus duplo longiora, in tubum corollam breviter excedentem coalita. Antheræ glabræ. *Ovarium* stipitatum. *Legumen* arcuatum v. in annulum pollicem diametro curvatum, glabrum, valvis 3–4 lin. latis ante dehiscentiam planis, demum varie contortis. *Semina* arilla carnosa semi-involuta.—G. Bentham.

Fig. 1. Flower. 2. Section of the same, showing the pistil. 3. Fruit. 4. Seed.

Plates 1169 and 1170.

BERNOULLIA FLAMMEA, *Oliv.*

Sterculiaceæ.

Bernoullia, *Oliv. gen. nov.* *Calyx* campanulatus breviter 5-lobatus; lobis deltoideis, æstivatione valvatis. *Petala* 5, columnæ staminææ adnata, oblonga, calycem superantia, apice revoluta, longitudinaliter venosa. *Columna* staminea exserta, fere ad mediam lateraliter fissa, apice complanata, antherifera; antheræ 15–20, sessiles, ut videtur 2-loculares et arcte biseriatim dispositæ, loculis linearibus, longitudinaliter dehiscentibus. *Ovarium* ovoideum glabrum 5-loculare; loculis ∞-ovulatis; stylus teretiusculus elongatus glaber e fissura col. staminææ exsertus. *Fructus* (fide cl. Bernoulli) oblongus 5-gonus subindehiscens, 5-locularis. *Semina* indefinita, superiora inferne inferiora superne alata; albumen parcum.

B. flammea, *Oliv.*, species unica.

Hab. Not uncommon in the Costa Grande of Guatemala, from about 500 to 2,000 ft.—*Dr. G. Bernoulli* (Hb. Guatem. 553).

Arbor procera, glabra v. ultimis obsolete puberulis. *Folia* alterna, trifoliolata; foliolis petiolulatis ovali-oblongis utrinque acutatis v. apice breviter obtusiuscule acuminatis, integris, glabris, tenuiter coriaceis, nervo medio subtus prominulo, 3–5-poll. longis, 1$\frac{1}{2}$–1$\frac{3}{4}$ poll. latis, petiolulus $\frac{1}{2}$–$\frac{3}{4}$ poll., petiolus 2$\frac{1}{2}$–3 poll. longus. *Flores* in cymis unilateralibus multifloris racemiformibus paniculatis dispositi; paniculæ subterminales; pedunculi complanati glaucescentes faciebus lateralibus

cum cicatricibus bractearum delapsarum oblique notatis; pedicellis $\frac{1}{4}$–$\frac{1}{2}$ poll. longis. *Calyx* puberulus v. glabratus, lobis intus tomentoso-pubescentibus; $\frac{1}{4}$–$\frac{1}{3}$ poll. longus. *Petala* intus plus minus papilloso-pubescentia, glandulis immersis inter venulas ut videtur notata.

Of this remarkable Sterculiacea we possess a specimen in flower only, kindly communicated by Dr. G. Bernoulli, who writes that it is a very conspicuous tree in the Costa Grande of Guatemala during the months of November and December, when its 'whole crown is covered with inflorescences of the most splendid scarlet.' From our dried specimen I cannot satisfactorily describe the head of anthers. The fruit is figured from a careful drawing kindly sent by Dr. G. Bernoulli.—D. Oliver.

Plate 1169.—Fig. 1. Bud. 2. Staminal column from a bud. 3. Flower. 4. Staminal column of same, with adnate petals. 5. Same cut through, exposing the ovary. 6. Transverse section of ovary.

Plate 1170. Fruit.—Fig. 1. Seed. 2. Section of same:—*Figures on this plate natural size.*

Plate 1171.

MORINA BETONICOIDES, *Benth.*

Dipsaceæ.

M. betonicoides, *Benth. sp. n.*, foliis integerrimis lineari-lanceolatis ciliato-subspinosis, capitulo terminali, involucellis truncatis ore longe setoso, corollæ limbo parum inæquali, antheris 4 perfectis subæqualibus.

Hab. Woods of the Sikkim Himalaya, at an elevation of 11,000 to 12,000 feet, *J. D. Hooker*.

Caules e basi perenni suberecti, simplices, vix pedales, præter lineam longitudinalem villosam glabri. *Folia* radicalia 2–4 poll. longa, medio 3–4 lin. lata, acuta, margine setis longis rigidis subspinosis ciliata, supra viridia lævia glabra subavenia, subtus pallida v. albida costa prominula et nervo utrinque uno tenuiore percursa; caulina opposita sessilia pauca radicalibus similia nisi breviora, floralia brevia late lanceolata. *Flores* in capitulum terminalem subglobosum aggregati, additis interdum paucis ad axillas foliorum paris a capitulo parum distantis. *Folia* floralia (seu bracteæ) intra capitulum ovata, spinoso-ciliata, concava v. complicata, corolla breviora. *Involucella* sessilia, campanulata, ad 3 lin. longa, membranacea, villosula, ad oram pilis

breviter tenuibus et setis 12–20 rigidulis inæqualibus majoribus linea longioribus ciliata. *Ovarium* intra involucellum breve, glabrum. *Calyx* superus, involucellum superans, limbo latiusculo valde obliquo acuto subspinoso-dentato. *Corollæ* pallide purpureæ tubus semipollicaris v. paullo longior, incurvus, apice parum dilatatus, extus canopubescens; limbus patens, valde obliquus, lobis tamen 5 parum inæqualibus latis emarginatis. *Stamina* didynama, filamentis brevibus prope apicem tubi, superioribus altius quam inferioribus affixis; antheræ ovatæ, vix exsertæ, omnes consimiles. *Ovarium* et fructus (adhuc immaturus) omnino generis.—G. Bentham.

Fig. 1. Flower enclosed in the involucel. 2. Ovary, calyx, and style. 3. Corolla. 4. Section of the young fruit.

Plate 1172.

OMPHACOMERIA ACERBA, *A. DC.*

Santalaceæ.

O. acerba, *A. DC. Prod.* xiv. 681, ramulis teretibus vix striatis, *Benth. Fl. Austral.* vi. 225.

Leptomeria acerba, *R. Br. Prod.* 354.

Hab. Eastern extratropical Australia.

Frutex 2–4-pedalis, dioicus, spartioideus, in speciminibus visis omnino aphyllus, nec squamulis loco foliorum instructus. *Ramuli* stricti, elongati, rigiduli, tenuissime striati, nodis glanduliformibus. *Flores* ad nodos sessiles, masculi per 3–5 fasciculati, ebracteati. *Perianthii* segmenta ovata, semilineam longa et lata; antheræ filamento brevissimo segmentis paullo breviores. *Discus* centralis (seu ovarii rudimentum) latus, depressus. *Flores fœminei* solitarii. *Ovarium* ovoideum. crassum, ½ lin. longum. *Perianthii* superi segmenta maris. *Antherarum* rudimenta sessilia. *Stylus* brevis, crassus, lobis 2 æqualibus patentibus brevibus crassis. *Drupa* ovoidea, 3–4 lin. longa, epicarpio carnoso.—G. Bentham.

Fig. 1. Cluster of male flowers. 2. Male flower expanded. 3. Female flower. 4. Fruit.

Plate 1173.

ANTHOBOLUS FOVEOLATUS, *F. Muell.*

Santalaceæ, Tribe Anthoboleæ.

A. foveolatus, *F. Muell. Fragm. Phytogr. Austral.* i. 212.—Foliis lineari-teretibus crassiusculis, floribus 4-meris, fructus endocarpio extus foveolato.—*Benth. Fl. Austral.* vi. 226.

Hab. South-west Australia.

Frutex 6–8-pedalis, dioicus, glaber. Rami virgati, ramulis tenuibus patentibus v. pendulis, teretibus v. novellis leviter angulatis. Folia lineari-teretia, acuta, $\frac{3}{4}$–$1\frac{1}{2}$ poll. longa, acutiuscula v. mucronulata. *Flores* masculi per 2–3 ad apicem pedunculi 3–4-lineari breviter pedicellati. *Perianthii* segmenta in speciminibus nostris semper 4 videntur (nec ut in *A. filifolia* sæpius 3) $\frac{3}{4}$ lin. longa, late ovata. *Discus* centralis depressus, obscure 4-lobus. Plantæ fœmineæ flores non vidi. *Fructus* in pedunculo fere pollicari superne incrassato infra medium subarticulato solitarii. *Drupa* ovoidea, 3–4 lin. longa, epicarpio tenuiter carnoso, endocarpio osseo, extus foveolis minimis irregulariter longitudinaliter seriatis notata.—G. Bentham.

Fig. 1. Male flower. 2. The same expanded. 3. Section of the fruit and seed showing the embryo.

Plate 1174.

APHANANTHE PHILIPPINENSIS, *Planch.*

Urticeæ, Tribe Celtideæ.

A. philippinensis, *Planch. in Ann. Sc. Nat. ser.* 3. x. 337, foliis remote denticulatis v. grosse spinoso-dentatis sublobatis, floribus masculis dense fasciculatis. *Benth. Fl. Austral.* vi. 160.—Taxotrophis rectinervis, *F. Muell. Fragm. Phytogr. Austral.* vi. 192.—Sponia ilicifolia, *S. Kurz in Flora*, 1872, 448.—Aphananthe philippinensis et Aphananthe rectinervis, *Planch. in DC. Prod.* xvii. 208.

Hab. Eastern tropical and subtropical Australia, the Philippine islands and probably other islands of the Indian Archipelago.

Frutex elatior v. arbor, glaber v. scabro-pubescens. Folia breviter petiolata, late ovata v. elliptica, acuta v. obtusiuscula, rigide mem-

branacea v. coriacea, scabra pennivenia et subtransverse venulosa, venis primariis subtus prominentibus intra marginem anastomosantibus, ultra marginem tamen sæpius in denticulos rigidos mucronatos productis. *Folia* ramorum floralium sæpius 1–2-pollicaria denticulis parvis distantibus, ramorum sterilium nunc multo majora ovato-lanceolata basi truncata acuti-dentata at vix sinuata, nunc breviora proportione latiora et profunde sinuata, dentibus more *Ilicis* pungenti-acuminatis. *Florum masculorum* cymæ parvæ, subsessiles, laxæ. Perianthii segmenta concava, ciliolata. *Antheræ* demum semi-exsertæ. *Floris fœminei* perianthii segmenta angusta. *Fructus* ovoideus, acuminatus v. obtusiusculus, ad 3 lin. longus. *Semen* fere globosum, testa membranacea. *Albumen* parcum v. 0. *Embryo* involutus, cotyledone exteriore majore interiorem obtegente.

The differences in foliage by which the Australian and the Philippine Island plant were distinguished by Planchon may all be observed in Australian specimens, sometimes on different branches of the same shrub. The two other species described by Planchon are very distinct, *A. aspera* with its regularly serrate membranous leaves and loose male cymes, besides other characters, and *A. cuspidata* with large perfectly entire leaves, &c.—G. Bentham.

Fig. 1. Male flower. 2. Female flower. 3. Ovary, longitudinal section: *all enlarged*. 4. Fruit: *natural size*. 5. The same, longitudinal section. 6. Seed. 7. Embryo.

Plate 1175.

PHLEBOCARYA CILIATA, *R. Br.*

Amaryllideæ, Tribe Hæmodoreæ.

P. ciliata, *R. Br. Prod. Fl. Nov. Holl.* 301, foliis planis margine ciliatis, antheris muticis.—*Benth. Fl. Austral.* vi. 424.

Hab. South-west Australia, *R. Brown* and many others.

Rhizoma breve, crassum. *Folia* radicalia e basi lata rigida nigra vaginante anguste linearia, $\frac{3}{4}$–$1\frac{1}{2}$-pedalia, 1–2 lin. lata, rigida v. subflaccida, prominule striata, ciliis rigidulis sæpius distantibus et interdum vix nisi in foliis junioribus obviis marginata. *Flores* ad 2 lin. longi (flavo-virescentes?), ad axillas bractearum linearium 1–2 lin. longarum breviter pedicellati, in cymulas primum densas 6–12-floras dispositi, cymulis ad apicem scapi foliis breviores plurimis pedunculatis, ramulis demum elongatis inflorescentia tota paniculam laxam format. *Perianthii* segmenta lanceolata, in vivo patentia, in speciminibus siccis

omnia erecta conniventia. *Filamenta* brevissima; antheræ anguste oblongæ, apice obtusæ, connectivo ultra loculos haud producto. *Ovarium* per anthesin uniloculare, axi tamen centrali filiformi sæpe usque ad apicem loculi continuo persistente. ***Fructus*** parvus, ovoideus, indehiscens, perianthii segmentis coronatus. *Semen* sæpius unicum, erectum, globosum, testa membranacea, albumine carnoso.

In this, as in the following species, the ovary is probably in its earliest stage 3-celled with one erect ovule in each cell; but at the time of flowering the dissepiments have wholly disappeared, or have left only a very slender central axis and faint remains in the shape of slightly-raised longitudinal lines in the inside of the cavity. I have not seen quite perfect seeds, but in the apparently ripe fruits I have always found only a single obtuse seed, not the three acuminate ones represented on the plate.—G. Bentham.

Fig. 1. Flower-bud ready to open. 2. Flower expanded. 3. Ovary, vertical section. 4. Fruit. 5. The same, vertical section, showing, however, all the ovules enlarged instead of only one.

Plate 1176.

PHLEBOCARYA FILIFOLIA, *F. Muell.*

Amaryllideæ, Tribe Hæmodoreæ.

P. filifolia, *F. Muell.*, foliis filiformi-teretibus glabris, antheris connectivo loculos excedente apiculatis.—*Benth. Fl. Austral.* vi. 425.

Hab. South-west Australia, *Drummond.*

Undique glaberrima, ciliis nullis, cæterum habitu et inflorescentia *P. ciliatæ* subsimilis. *Foliola* angustissime teretia, majora ultrapedalia. *Panicula* quam in *P. ciliata* sæpius laxior, floribus paullo minoribus. *Perianthii* segmenta anguste acuminata. *Antherarum* connectivum in appendiculam loculis longiorem conspicue productum. *Ovarium* plus minus perfecte 3-loculare.

In the few flowers I could examine of this species, I generally found the remains of the dissepiments much more perfect than in *P. ciliata*, although on one occasion they had almost entirely disappeared.—G. Bentham.

Fig. 1. End of a leaf. 2. Flower. 3. The same expanded. 4. Stamen. 5. Ovary and style. 6. Section of the ovary.

Plate 1177.

HETEROTOMA MACROCENTRON, *Benth.*

Campanulaceæ, Tribe Lobelieæ.

H. macrocentron, *Benth.*, herbacea, procumbens, ramis breviter ascendentibus, foliis orbiculato-cordatis, corollæ calcare adnato longe cylindraceo.

Hab. Sierra Madre, north-west of Mexico, *Seemann.*

Herba videtur perennis, laxe pilosula. *Caules* tenues, ramosi, procumbentes, apicibus floriferis breviter ascendentibus. *Folia* prope basin ramorum floralium pauca, petiolata, latissime ovata v. pleraque suborbicularia, margine irregulariter denticulata, $\frac{1}{2}$–1 poll. diametro, utrinque breviter pilosula, ad basin pedunculi pauca parva subsessilia. *Pedunculus* terminalis, cum racemo 3–5-pollicaris, tenuis. *Flores* supra medium pedunculum pauci, cærulei, pedicellis filiformibus erectis $\frac{1}{2}$–$1\frac{1}{2}$-pollicaribus fulti, bracteis sub pedicellis parvis minutisve. *Calycis* tubus adnatus obovoideus, fere $1\frac{1}{2}$ lin. longus, limbus postice erectus $2\frac{1}{2}$ lin. longus, alte 3-fidus, antice in appendicem linearem corollæ calcari adnatam productus, lobis 2 ab extremitate calcaris inflexo-erectis. *Corolla* lata, ad pollicem longa, calcare cylindraceo, tubo postice ad basin fisso, limboque patente 5-fido inter se subæquilongis. *Stamina* e tubo breviter exserta, filamentis in columnam antice calcari adnatam cæterum liberam connatis; antheræ 2 apice pilis brevibus hirtellæ, cæteræ nudæ.

This species, with a peculiar habit, has neither the large, broad orange-red flowers of *H. lobelioides*, nor the small very short-spurred flowers of *H. tenella* and *H. arabidioides*, all natives of Mexico.—G. Bentham.

Fig. 1. Flower, enlarged. 2. Stamens. 3. Summit of the style.

Plate 1178.

DIALYPETALUM FLORIBUNDUM, *Benth.*

Campanulaceæ, Tribe Lobelieæ.

Dialypetalum, *Benth. in Benth. et Hook. Gen. Pl.* ii. 553.

D. floribundum, *Benth., species unica.*

Hab. Madagascar, province Emirna, *Bojer ?*, *Lyall*, between Tamatave and Antananarivo, at an elevation of 4,000 feet, in moist places, *Meller.*

Herba videtur pube minuta scabriuscula, caule erecto valido pluripedali præter inflorescentiam simplici; pars inferior tamen nobis deest. *Folia* alterna, anguste lanceolata, acuminata, basi in petiolum brevem contracta, 3–6-pollicaria, dentibus parvis interdum fere obsoletis instructa, pennivenia et reticulato-venulosa, venis subtus prominulis; superiora minora gradatim in bracteas abeuntia. *Racemi* v. rami floriferi axillares, simplices v. 2–3-fidi, jam infra medium v. a basi floribundi, inferiores folio subæquilongi, basi foliis brevibus instructi, superiores foliis parvis longiores, præter bracteas aphylli, paniculam thyrsoideam foliatam 1–2-pedalem formantes. *Pedicelli* filiformes, 2–3 lin. longi, ad axillam bracteæ parvæ lineares. *Flores* vix 2 lin. longi, flavo-virescentes. *Calycis* tubus adnatus turbinatus, vix $\frac{1}{2}$ lineam longus; lobi 5, subæquales, lineari-lanceolati, petalis breviores. *Petala* 5, a basi distincta, anguste oblonga, acutiuscula, $1\frac{1}{2}$ lin. longa, inter se subæqualia. *Stamina* petalis paullo breviora, filamenta latiuscula, basi distincta, apice contracta conniventia connataque; antheræ filamentis æquilongæ, 2 vertice minute 1-setæ, cæterum glabræ. *Capsula* fere omnino infera, ovoidea, $1\frac{1}{2}$ lin. longa, vertice breviter conico v. convexo inter lobos calycinos petalaque emarcida 2-valvis.—G. Bentham.

Fig. 1. Flower. 2. The same, with the calyx-lobes and petals removed, showing the stamens. 3. Single stamen. 4. Pistil. 5. Capsule.

Plate 1179.

AMBLYOCALYX BECCARII, *Benth.*

Apocynaceæ, Tribe Plumerieæ.

Amblyocalyx, *Benth. in Benth. et Hook. Gen. Pl.* ii. 698.

A. Beccarii, *Benth., species unica.*

Hab. Sarawak, Borneo, *Beccari, n.* 1628.

Frutex præter inflorescentiam glaber. *Folia* ternatim verticillata, oblonga v. obovali-oblonga, acuminata, basi in petiolum longiusculum contracta, 2–5-pollicaria, integerrima, coriacea, supra nitidula, subtus in sicco badia, pennivenia. *Pedunculi* ad apices ramorum 5–7, in umbellam breviter pedunculatam conferti, 1–2-pollicares, cymas terminales trichotomas floribundas cano-tomentellas ferentes. *Flores* parvi, subsessiles, ebracteati. *Calyx* turbinato-campanulatus, lineam longus, lobis rotundatis tubo brevioribus. *Corolla* ad 2 lin. longa, lobis orbiculatis tubo duplo brevioribus æstivatione contortis (convolutis) dextrorsum obtegentibus. Antheræ obtusæ, supra medium tubum

filamentis brevissimis inclusæ. *Ovarii* carpella 2, basi subconnata et tubo calycino brevissime adnata, cæterum libera. *Stylus* ad altitudinem antherarum attingens, stigmate ovoideo-capitato extus papilloso, apiculo lævi brevissimo 2-lobo. *Ovula* in quoque carpello 2, sub apice collateraliter affixa. *Fructus* ignotus.—G. Bentham.

Fig. 1. Flower. 2. The same, the corolla cut open, showing the stamens and style. 3. Pistil. 4. Ovary, longitudinal section. 5. The same, transverse section.

Plate 1180.

NOTONERIUM GOSSEI, *Benth.*

Apocynaceæ, Tribe Plumerieæ.

Notonerium, *Benth. in Benth. et Hook. Gen. Pl.* ii. 698.

N. Gossei, *Benth., species unica.*

Hab. Interior of South Australia, *Gosse's Expedition*, communicated by Dr. Schomburgk, 1874.

Caules in speciminibus plures, erecti, ramosi, tenues, basi duri, vix semipedales, uti tota planta glabri. *Folia* alterna, anguste linearia, acuta, integerrima, longiora ultra pollicaria, ramealia multo breviora. *Flores* parvi, ad apices ramorum pauci, subcymosi, conferti, pedicellis brevissimis. *Calyx* 5-partitus, segmentis angustis acuminatis linea paullo longioribus. *Corollæ* tubus 2 lin. longus, intus superne lineis 5 pilosis instructus; limbus patens, lobis 5 in alabastro induplicato-valvatis acutiusculis lineam longis. *Stamina* prope basin corollæ affixa, medio tubo inclusa, filamentis filiformibus basi leviter incrassatis; antheræ lanceolatæ, acuminatæ, circa stigma conniventes at liberæ, loculis basi obtusis inappendiculatis. *Ovarii* carpella 4 (v. 2 bipartita ?). *Stylus* filiformis; stigma clavatum et crasse capitatum. *Ovula* in quoque carpello v. loculo solitaria, lateraliter affixa.

It is to be regretted that the few specimens of this very interesting plant were not in a more advanced state, so as to have afforded more certain carpological characters. The ovary in the flower examined appeared to be divided into 4 distinct carpels, but they may possibly have been the moieties of 2 carpels with deep dorsal furrows between the ovules. At any rate, it shows no close affinity to any other known genus, either in character, habit, or station.—G. Bentham.

Fig. 1. Flower. 2. The same, the corolla cut open, showing the stamens and pistil. 3. Single stamen.

Plate 1181.

PLEIOCARPA MUTICA, *Benth.*

Apocynaceæ, Tribe Plumerieæ.

Pleiocarpa, *Benth. in Benth. et Hook. Gen. Pl.* ii. 699.

P. mutica, *Benth., sp. n.*, corollæ lobis tubo duplo brevioribus, fructus carpellis parvis ovoideo-globosis muticis.

Hab. West tropical Africa, on the Old Calabar River, *Mann, n.* 2277.

Frutex 5-pedalis, glaber. *Folia* opposita, breviter petiolata, elliptico-oblonga, breviter acuminata, coriacea, nitida, integerrima, 4–6-pollicaria. *Flores* ad axillas sat numerosi (10–20) nodoso-glomerati, arcte sessiles, ebracteati. *Calyx* late campanulatus, lineam latus, 5-partitus, segmentis latis obtusis. *Corollæ* tubus 6–7 lin. longus, tenuiter cylindraceus, superne parum ampliatus; lobi 5, stellato-patentes, vix 3 lin. longi, ovati, obtusi, æstivatione contorti, dextrorsum obtegentes leviter sinistrorsum torti. Antheræ supra medium subsessiles, oblongo-lanceolatæ, liberæ. *Ovarii* carpella 5, distincta, 1–2-ovulata. *Stylus* longiusculus, stigmate oblongo. *Fructus* carpella libera, ovoideo-globosa, erostria, vix apice brevissime acuminata v. obtusa, ad 4 lin. longa et vix angustiora, extus undique rugosa, siccitate nigricantia.

The only other genera of *Apocynaceæ* with normally more than two distinct carpels are *Lepinia*, Dene., from Taiti, and apparently the *Notonerium* figured in the last plate from Australia, both of them very different from *Pleiocarpa* in other characters.—G. Bentham.

Fig. 1. Flower. 2. Corolla cut open, showing the stamens and pistil. 3. Pistil. 4. Ovary, transverse section. 5. Fruit (unripe).

Plate 1182.

PLEIOCARPA ROSTRATA, *Benth.*

Apocynaceæ, Tribe Plumerieæ.

P. rostrata, *Benth., sp. n.*, corollæ lobis tubo æquilongis, fructus carpellis ovoideo-oblongis longe rostratis.

Hab. West tropical Africa, on the Cameroon River, *Mann.*

Frutex 15-pedalis, glaber. *Folia* opposita, breviter petiolata, ovali-elliptica, brevissime acuminata, integerrima, coriacea, nitida, 6–8-pollicaria. *Flores* ad axillas pauci, arcte sessiles, ebracteati. *Calyx* campanulatus, lineam longus, alte 5-fidus, lobis acutiusculis. *Coroïlæ* tubus cylindraceus, tenuis, pollicem longus; limbus patens, lobis oblongis, parum obliquis, pollicaribus. *Antheræ* supra medium tubum subsessiles, lanceolatæ, acutiusculæ, liberæ. *Ovarii* carpella 3, distincta, singula 4-ovulata. *Stylus* longiusculus, stigmate anguste oblongo. *Fructus* carpella (adhuc immatura) libera, subpatentia, ovoideo-oblonga, pollicaria, in rostrum semipollicare attenuata, carnosula, nigra, grosse tuberuloso-rugosa.

We are as yet unacquainted with the ripe fruits or seeds either of this or the preceding species, which alone at present constitute the genus.—G. Bentham.

Fig. 1. Corolla cut open, showing the stamens and pistil. 2. Single stamen. 3. Fruit (unripe).

Plate 1183.

PYCNOBOTRYA NITIDA, *Benth.*

Apocynaceæ, Tribe Echitideæ.

Pycnobotrya, *Benth. in Benth. et Hook. Gen. Pl.* ii. 715.

P. nitida, *Benth., species unica.*

Hab. West tropical Africa, Mount John River, *Mann.*

Frutex super arbores alte scandens, glaber. *Folia* opposita v. ternatim verticillata, breviter petiolata, oblongo-lanceolata, obtuse acuminata, $2\frac{1}{2}$–$3\frac{1}{2}$-pollicaria, coriacea, nitida, integerrima, costa subtus prominula, venis transversis tenuibus crebris parallelis, subtus punctis nigris conspersa. *Flores* parvi, in cymis densis in capitula contractis numerosi, subsessiles, capitulis breviter pedunculatis ad apices ramorum corymbosis v. breviter denseque paniculatis, bracteis minutis v. obsoletis. *Calyx* parvus, 5-fidus, lobis obtusis. *Corollæ* tubus brevis subcampanulatus; limbus patens, vix 3 lin. diametro, lobis 5 oblongis æstivatione contortis sinistrorsum obtegentibus. *Stamina* 5, basi corollæ affixa, filamentis brevissimis latis; antheræ lanceolato-sagittatæ, acuminatæ, circa stigma conniventes eique medio adhærentes, loculis basi in appendiculas vacuas tenues adnatas extremitate brevissime recurvas productis. *Ovarii* carpella 2, distincta, pluri-ovulata. *Stylus* brevissimus, stigmate majusculo subgloboso. *Fructus* ignotus.—G. Bentham.

Fig. 1. Flower. 2. Corolla cut open, showing the stamens. 3. Single stamen. 4. Pistil.

Plate 1184.

ZYGODIA AXILLARIS, *Benth.*

Apocynaceæ, Tribe Echitideæ.

Zygodia, *Benth. in Benth. et Hook. Gen. Pl.* ii. 716.

Z. axillaris, *Benth., sp. n.*, ramulis rufo-villosis, foliis ovali-oblongis obtusis v. acutiusculis basi late cordatis.

Hab. West tropical Africa, Old Calabar River, *Mann.*

Frutex 8–10-pedalis, subscandens, divaricato-ramosus, ramulis pilis rufescentibus dense villosis. *Folia* opposita, ovali-oblonga, 1–1½-pollicaria, a basi fere ad apicem 6–9 lin. lata, glabra v. subtus ad costas hirtella, integerrima, pennivenia, petiolo vix linea longiore fulta. *Cymæ* axillares, paucifloræ, pedunculo petiolum vix æquante, bracteis minimis ovatis. *Flores* subsessiles, ad 2 lin. longi. *Calyx* 5-partitus, linea brevior, lobis rotundatis obtusis. *Corolla* campanulata, alte 5-fida, intus glabra, lobis oblongis obtusis leviter dextrorsum obtegentibus. *Stamina* prope basin corollæ affixa, filamentis brevissimis latis; antheræ lanceolato-sagittatæ, brevissime acuminatæ, circa stigma connivентes eique medio adhærentes, loculis basi in appendiculas vacuas breves subrecurvas productis. *Ovuli* carpella 2, villosa, pluri-ovulata. *Stylus* brevis, stigmate ovoideo, apiculo acuto vix 2-lobo. *Fructus* ignotus.

Fig. 1. Flower. 2 Corolla cut open, showing the stamens and pistil. 3. Single stamen. 4. Pistil. 5. Ovary, transverse section.

The genus comprises the two following nearly allied but apparently distinct species :—

Z. myrtifolia, *Benth.*, glabra, foliis elliptico-oblongis breviter acuteque acuminatis basi acutiusculis distincte petiolatis, cymis pedunculo petiolo æquilongo fultis, bracteis corollæque lobis acutiusculis.—Folia pleraque sesquipollicaria, tenniora quam in *Z. axillari.* Petioli et pedunculi 1–1½ lin. longi.

Hab. Bagamogo in Zanzibar, *Kirk.*

Z. subsessilis, *Benth.*, glabra, foliis obovali- v. oblongo-ellipticis acute acuminatis, basi obtusis brevissime petiolatis, cymis pedunculo petiolo subduplo longiore fultis, bracteis corollæque lobis obtusiusculis.—Folia 2–3-pollicaria. Flores fere *Z. axillaris*, pedunculo communi 1–2 lin. longo.

Hab. Congo, *Chr. Smith.*—G. Bentham.

Plate 1185.

MOTANDRA GUINEENSIS, *A. DC.*

Apocynaceæ, Tribe Echitideæ.

Motandra, *A. DC.*; *Benth. et Hook. Gen. Pl.* ii. 715.

M. guineensis, *A. DC. Prod.* viii. 423, *species unica.*

Hab. West tropical Africa, Guinea, *Thonning* (*DC.*); Niger River, *Barter.*

Frutex ramis tenuibus subscandentibus uti petioli et inflorescentia tomento rufescente pubescentibus demum glabratis. *Folia* opposita, breviter petiolata, ovalia v. oblonga, obtuse acuminata, basi rotundata v. subcordata, pleraque 2–3-pollicaria, integerrima, pennivenia, venis primariis costaque subtus prominulis tomentoso-pubescentibus, cæterum glabrata. *Flores* parvuli, trichotome cymosi, cymis in paniculam thyrsoideam terminalem floribundam dispositis. Bracteæ minutæ. *Pedicelli* breves. *Calyx* semilinea paullo longior, obtuse 5-lobus. *Corollæ* tubus 2 lin. longus, rectus, superne paullo latior, lobi tubo subdimidio breviores, oblongi, sinistrorsum obtegentes. *Stamina* basi corollæ affixa, inclusa, filamentis brevissimis latis; antheræ lanceolato-sagittatæ, vix acuminatæ, appendice penicillato-pilosa coronatæ, circa stigma conniventes et ei medio adhærentes, loculis basi in appendiculas vacuas extremitate recurvas productis. *Ovarii* carpella 2, multiovulata. *Stylus* brevis, stigmate longe oblongo, apiculo 2-fido. *Fructus* ignotus.—G. Bentham.

Fig. 1. Bud. 2. Flower. 3. Corolla cut open, showing the stamens and pistil. 4. Stamens. 5. Single stamen. 6. Pistil.

Plate 1186.

GYMNOLÆMA NEWII, *Benth.*

Asclepiadeæ, Tribe Periploceæ.

Gymnolæma, *Benth. in Benth. et Hook. Gen. Pl.* ii. 740.

G. Newii, *Benth., species unica.*

Hab. East tropical Africa, on Kilimanjaro mountain, *C. New.*

Frutex videtur, an erectus an volubilis e specimine unico haud patet, pube tenuissima ad ramum costamque foliorum conspersus, cæterum glaber. *Folia* opposita, subsessilia, lineari-lanceolata, acute acuminata, integerrima, basi rotundata, ad 3 poll. longa, supra læviuscula, subtus pallida, costa prominula, venis transversis reticulatisque crebris tenuibus. *Flores* parvi, in cymulas densas in una axilla pedunculatas conferti, pedicellis brevibus, bracteis ovatis acutis pedicello vix brevioribus. *Calyx* vix semilinea longior, campanulatus, sub-5-partitus, segmentis ovatis acutis. *Corollæ* tubus latus, calyci subæqualis; lobi duplo longiores, patentes, in alabastro angustissime dextrorsum obtegentes fere valvati. *Corona* 0. *Stamina* basi corollæ affixa, filamentis brevibus latis basi in annulum connatis cæterum liberis; antheræ ovatæ, corolla parum breviores, imberbes, acutæ, apice supra stigma conniventes cohærentesque. *Pollen* granulosum, corpusculis superne oblongis concavis acuminatis applicitum. *Stigma* depresso-conicum, muticum, medio leviter umbonatum. *Pedicelli* fructiferi parum accreti, ad 2 lin. longi. *Folliculi* subteretes, læves, acuminati, $1\frac{1}{2}$-pollicares. *Semina* oblonga, compressa, apice angustiora, coma tenui haud longa coronata.

This plant is known only from the small but very complete specimen gathered by the late Rev. C. New on his expedition up the Kilimanjaro mountain, and forming part of his small (chiefly fragmentary) collection transmitted to the Kew herbarium through Dr. Kirk. As a genus it is readily distinguished amongst *Periploceæ* by the absence of all corona, without the large appendages to the anthers which distinguish the Javanese and Sumatran genera *Phyllanthera* and *Pentanura*.—G. Bentham.

Fig. 1. Flower. 2. Gynostegium. 3. Corpuscle.

Plate 1187.

ECTADIOPSIS NIGRITANA, *Benth.*

Asclepiadeæ, Tribe Periploceæ.

Ectadiopsis, *Benth. in Benth. et Hook. Gen. Pl.* ii. 741.

E. nigritana, *Benth., sp. nov.*, foliis anguste lanceolatis, cymis laxiusculis multifloris.

Hab. West tropical Africa, Nupe on the Niger River, *Barter.*

Caules (e basi lignosa?) herbacei, erecti, 4-pedales, ramis virgatis glabris. *Folia* opposita, subsessilia, anguste lanceolata, acutiuscula, integerrima, basi contracta, 2–3-pollicaria, supra lævia, subtus pallida,

costa parum prominente, venis tenuissime reticulatis, floralia multo minora, in bracteas abeuntia. *Cymæ* laxiusculæ, in una axilla foliorum floralium sessiles, nodis floriferis ad apices ramorum distantibus. *Flores* parvi, breviter pedicellati, bracteis angustis acutis pedicello brevioribus. *Calyx* vix lineam longus, segmentis ovatis basi intus glandulis 5 segmentis alternis instructus. *Corollæ* tubus calycem vix æquans; lobi duplo saltem longiores, anguste oblongi, anguste dextrorsum obtegentes. *Coronæ* squamæ 5, medio tubo corollæ affixæ, brevissime clavatæ. *Stamina* basi corollæ affixa, filamentis basi in annulum connatis superne brevissime discretis; antheræ ovatæ, breviter acuminatæ, imberbes, in conum stigma obtegentem connatæ. *Pollen* granulosum, corpusculis parvis linearibus vix apice latioribus applicitum. *Fructus* ignotus.

The genus comprises also the *Ectadium oblongifolium*, Meissn., from Natal land, with much shorter and broader leaves and usually much fewer flowers in closer cymes, and apparently a third species, nearly allied to the Niger one, gathered in Zambesi land by Dr. Kirk.—G. Bentham.

Fig. 1. Bud. 2. Corolla cut open, showing the coronal scales and gynostegium. 3. Anthers, seen from the back. 4. Pistil. The reticulation of the leaves too strongly represented.

Plate 1188.

AMBLYSTIGMA HYPOLEUCUM, *Benth.*

Asclepiadeæ, Tribe Cynancheæ.

Amblystigma, *Benth. in Benth. et Hook. Gen. Pl.* ii. 748.

A. hypoleucum, *Benth., sp. nov.*, foliis cordato-lanceolatis subtus lana densa candida tomentosis, pedunculis petiolo subæquilongis.

Hab. Bolivia, *Bridges.*

Caules volubiles, novelli tomentosi, demum glabrati. *Folia* opposita, latiuscule lanceolato-cordata, acutiuscula, integerrima, auriculis baseos rotundatis, 2–3 poll. longa, ½–1 poll. lata, crassiuscula, supra glabra, subtus lana brevi sed densa alba vestita, petiolo ½–1 poll. longo. *Cymæ* in una axilla pedunculo ½–1-pollicari fultæ, laxiusculæ, bracteis minimis angustis, pedicellis calyci subæquilongis. *Calycis* segmenta linearia, 3 lin. longa, tomentosa. *Corolla* calycem parum excedens, latiuscule campanulata, lobis patentibus latis tubo duplo brevioribus. *Corona* 0. *Stamina* prope basin tubi affixa, filamentis in tubum brevissimum connatis; antheræ basi subauriculatæ, medio dorso leviter incrassatæ, membrana inflexa terminatæ. *Pollinia* in quoque

loculo solitaria, longiuscula, ab apice attenuato caudicula longa pendula. *Stigma* late umbonatum, erostre. *Fructus* ignotus.

A second species, which, however, may possibly prove to be a luxuriant large-flowered variety, is in Mandon's Bolivian collection, and may be thus distinguished :—

A. pedunculare, *Benth.*, foliis late cordato-lanceolatis subtus tenuiter tomentoso-pubescentibus, pedunculis petiolo duplo longioribus.—Folia quam in *A. hypoleuco* tenuiora majoraque. Flores majores. Calycis segmenta linearia, 4–4½ lin. longa. Corolla semipollicaris, lobis tubo quadruplo brevioribus.

Hab. Bolivia, prov. Larecaja, in the Cerro Iminapi, near Sorata, *Mandon, n.* 353.—G. Bentham.

Fig. 1. Flower. 2. The same, the corolla removed, showing the gynostegium. 3. Pollen-masses. 4. Stigma.

Plate 1189.

RHYNCHOSTIGMA RACEMOSUM, *Benth.*

Asclepiadeæ, Tribe Marsdenieæ.

Rhynchostigma, *Benth. in Benth. et Hook. Gen. Pl.* ii. 771.

R. racemosum, *Benth., sp. nov.*, glaberrimum, foliis oblongis acuminatis, cymis 2–4-floris plerisque in racemo axillari elongato aphyllo v. vix basi foliato dissitis, coronæ squamis lineari-clavatis crassiusculis.

Hab. West tropical Africa, Cameroons Mountain, at an elevation of 4,500 feet, *Mann.*

Frutex ? volubilis, alte scandens, glaberrimus. *Folia* oblonga v. oblongo-elliptica, longiuscule acuminata, integerrima, basi rotundata v. cuneata, 3–4-pollicaria, coriacea, nitida, petiolo 5–9 lin. longo. *Cymæ* sæpius 2-floræ rarius 3–4-floræ, nunc in una axilla solitariæ breviter pedunculatæ, nunc secus ramulum aphyllum dissitæ racemum formantes axillarem folio breviorem v. rarius longiorem basique foliatum. *Flores* nutantes, pedicellis recurvis 2–3 lin. longis ; bracteæ minutissimæ. *Calycis* segmenta vix lineam longa. *Corollæ* tubus turbinatus, 2½ lin. longus ; lobi lineari-oblongi, patentes, tubo æquilongi. *Coronæ* squamæ 5, basi tubo staminео adnatæ, apice liberæ, erectæ, lineari-clavatæ, obtusæ, crassiusculæ, anthera subduplo longiores. *Stamina* basi corollæ affixa, filamentis basi in annulum connatis superne breviter discretis ; antheræ breves, membrana inflexa stigmati arcte appressa terminatæ. *Pollinia* in quoque loculo solitaria, parva, ovoidea, erecta,

caudiculis brevissimis corpusculo parvo affixa. *Stigma* crassum, inter antheras obovoideum, in rostrum obtusum contortum squamis coronæ duplo longius productum. *Fructus* ignotus.

Fig. 1. Flower. 2. Corolla cut open, showing the coronal scales and gynostegium. 3. Pollen-masses. 4. Pistil.

We have two other species of the same genus, both from West tropical Africa.

R. brevipes, *Benth.*, minute tomentellum v. glabratum, foliis ovali-ellipticis breviter et acute acuminatis, cymis plurifloris ad axillas sessilibus, coronæ squamis alte adnatis apice liberis rotundato-spathulatis. Folia 2–3-pollicaria, coriacea at vix nitida. Cymæ breviter 2-fidæ, ramis 5–7-floris. Corollæ ad 3 lin. longæ, albæ.

Hab. Banks of the Nun River, *Mann*.

R. parviflorum, *Benth.*, glabrum, foliis oblongo-ellipticis obtusiusculis, cymis plurifloris ad axillas sessilibus, coronæ squamis basi tantum adnatis ligulatis acuminatis.

Hab. Gaboon River, *Mann*.—G. Bentham.

Plate 1190.

SPHÆROCODON OBTUSIFOLIUM, *Benth.*

Asclepiadeæ, Tribe Marsdenieæ.

Sphærocodon, *Benth. in Benth. et Hook. Gen. Pl.* ii. 772.

S. obtusifolium, *Benth.*, *sp. n.*, foliis ovatis v. ovali-oblongis obtusis v. vix mucronatis, corollæ lobis conniventibus.

Hab. South-east tropical Africa, Shire River, near Miramballa, *Kirk*.

Caules e basi sublignosa procumbentes ascendentes v. flexuosi, in speciminibus 1–2-pedales, duri, tomento minuto pubescentes. *Folia* opposita, breviter petiolata, inferiora late ovalia obtusissima, superiora angustiora brevissime mucronulata $1\frac{1}{2}$–$2\frac{1}{2}$-pollicaria, integerrima, flaccida submembranacea, supra glabriuscula, subtus pube minuta pallida. *Cymæ* plurifloræ, in una axilla pedunculo 3–6 lin. longo fultæ, bracteis minutis. *Calycis* segmenta linearia, vix $1\frac{1}{2}$ lin. longa. *Corolla* globosa, 3 lin. diametro, semi-5-fida, lobis latis dextrorsum obtegentibus. *Coronæ* squamæ 5, tubo stamineo adnatæ, prominenter glanduliformes.

Stamina basi corollæ affixa, filamentis in tubum antheris angustiorem connatis; antheræ erectæ, obtusæ, subtruncatæ, lateraliter utrinque peltato-auriculatæ. *Pollinia* in quoque loculo solitaria, erecta, caudiculis minimis. *Stigma* vertice planum, 5-angulatum.

Although in many respects allied to *Marsdenia*, this genus appears quite distinct from the peculiar shape of the corolla, the absence of the terminal membrane of the anther, and from the apparent absence of the pollen-bearing corpuscles, at least in the flowers I examined, although the artist has figured one of at least an ordinary size. The artist has also by mistake figured the corolla-lobes as overlapping to the left instead of to the right.

Fig. 1. Bud (the twist reversed). 2. Flower. 3. Gynostegium. 4. Pollen-masses (the corpuscule connecting them perhaps incorrect). 5. Calyx and pistil.

An apparently distinct second species has been received from W. G. Gerrard from Natal, which may be thus characterised :—

S. natalense, *Benth.*, foliis ovali-oblongis acutiusculis, corolla lobis per anthesin apertis late campanulata. Pubes quam in *S. obtusifolio* evidentior, coronæ squamæ magis prominentes, a latere compressæ.—G. Bentham.

Plate 1191.

OIANTHUS URCEOLATUS, *Benth.*

Asclepiadeæ, Tribe Marsdenieæ.

Oianthus, *Benth. in Benth. et Hook. Gen. Pl.* ii. 775.

O. urceolatus, *Benth., species unica* (*Heterostemma urceolatum*, Dalz. in Hook. Kew Journ. iv. 295).

Hab. East Indian Peninsula, Belgaum and hills to the north, rare, *Dalzell.*

Suffrutex volubilis, glaber v. ramulis minute puberulis. *Folia* opposita, breviter petiolata, ovata v. ovato-lanceolata, acuta, integerrima, basi late subcordata, 3–5-nervia, 3–4-pollicaria. *Cymæ* paucifloræ, confertæ, in una axilla sessiles v. brevissime pedunculatæ. *Corolla* ovoideo-urceolata, purpureo-rubescens, 9–10 lin. longa, basi ventricosa, apice contracta, 5-fida, lobis brevibus latis anguste dextrorsum obtegentibus. *Corona* tubo stamineo affixa, late cyathiformis, gynostegium superans, carnosula, apice patentissima, late 5-loba et irregulariter dentata, dente terminali cujusque lobi introflexo. *Stamina* basi corollæ affixa, filamentis in tubum brevissimum connatis; an-

theræ breves, apice inflexæ, membrana parva terminatæ. *Pollinia* in quoque loculo solitaria, obovoidea, ascendentia. *Stigma* vertice depressum. *Fructus* ignotus.

Mr. Dalzell referred this plant to *Heterostemma*, as differing from that genus in no respect except as to the form of the corolla. That, however, is very remarkable; and the corona appears to me also much nearer that of *Asterostemma* than of *Heterostemma*. It is a question, however, whether the three genera might not be united, if a further general consolidation of Asclepiadeous genera be thought desirable.—G. Bentham.

Fig. 1. Corolla. 2. Gynostegium. 3. The same, seen from above. 4. Pollen-masses. 5. Ovaries slightly enlarged after the fall of the stigma.

Plate 1192.

LYSIDICE RHODOSTEGIA, *Hance.*

Leguminosæ, § Cæsalpinieæ.

L. rhodostegia, *Hance in Seem. Journ. Bot.* 1867, p. 299, *species unica.*

Hab. Southern China, on the West River, *T. Sampson* (No. 12155, Herb. Hance).

Frutex glaber. *Folia* alterna, abrupte pinnata, foliolis 3–4(–6)-jugis tenuiter coriaceis breviter petiolulatis oblongo-ellipticis breviter acuminatis basi rotundatis, inferiora $2\frac{1}{2}$–$4\frac{1}{2}$, superiora 4–6 poll. longa. Stipulæ parvæ subulatæ. *Flores* racemosi, racemis in paniculis terminalibus $\frac{1}{2}$–1 ped. longis dispositi; pedicelli puberuli, basi bracteis coloratis æquilongis ovato-ellipticis suffulti. *Calyx* basi 2-bracteolatus, bracteolæ parvæ oblongæ v. lanceolatæ; tubo cylindrico sursum ampliato, limbo 4-partito laciniis imbricatis sub anthesi reflexis oblongo-ellipticis obtusis, lobo postico latiore. *Petala* 3, æstivatione convolutiva (1 posticum, 2 lateralia), subæquilonga longe unguiculata lamina obovato-rotundata; petala 2 antica rudimentaria minutissima. *Stamina* antherifera 2 lateralia, filamentis elongatis glabris, antheris ellipticis dorsifixis; stamina 2 postica filiformia antheris cassis, antica rudimentaria subulata inæqualia. *Ovarium* breviter stipitatum compressum pilosulum 9–12-ovulatum; stylus laxus in alabastro circinatus; stigma terminale. *Legumen* oblanceolato-oblongum planum apice apiculatum, 6–7 poll. longum $1\frac{1}{2}$ poll. latum, valvis coriaceo-lignosis lævibus. *Semina* compressa, radicula recta.

Referred by Dr. Hance to the tribe *Amherstieæ*, near to the tropical American genus *Heterostemon*. The petals are remarkable in their convolute æstivation.—D. Oliver.

Fig. 1. Flower. 2. Ovary. 3. Longitudinal section of same. 4. Legume. 5. Seed.

Plate 1193.

HIRTELLA ZANZIBARICA, *Oliv.*

Rosaceæ, § Chrysobalaneæ.

H. zanzibarica, *Oliv.*, foliis nitentibus oblongo- v. ovato-ellipticis breviter obtuse acuminatis basi rotundatis sæpe emarginatis subcordatisve, paniculis terminalibus dense ramosis hirtis multifloris bracteatis, bracteis parvis margine glandulosis, calycis lobis tubo subæquilongis, staminibus 8–9 antheriferis liberis.

Hab. Mafia Island, East tropical Africa, *Dr. Kirk.*

Ramuli teretes glabrati. *Folia* alterna breviter petiolata coriacea subtus præcipue in nervo medio obsolete pubescentia, $2\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, $\frac{3}{4}$–$1\frac{1}{2}$ poll. lata. *Panicula* densa folia superans; bracteæ sæpe geminatæ rotundatæ margine glandulis pedicellatis inæquilongis onustæ; pedicelli breves. *Calyx* pubescens, lobis exterioribus plus minus glanduloso-marginatis. *Petala* calycem æquantia concava late elliptica. *Stamina* unilateralia a basi libera glabra; antheræ late v. quadrato-ellipticæ dorso affixæ. *Ovarium* dense pilosum 1-loculare, 2-ovulatum. *Fructus* ovoideus obtusus basi abrupte angustatus 1-spermus, pericarpio coriaceo intus molliter tomentoso, $\frac{3}{4}$–1 poll. longus.—D. Oliver.

Fig. 1. Flower. 2. Same, calyx-tube laid open. 3. Petal. 4. Stamens. 5. Section of ovary. 6. Fruit. 7. Section of same. 8 and 9. Embryo.

Plate 1194.

SYNAPTOLEPIS ALTERNIFOLIA, *Oliv.*

Thymelaceæ, § Gnidieæ.

S. alternifolia, *Oliv.*, glabra, foliis alternis ovalibus obtusis v. obtusiusculis basi plus minus cuneatis vix rotundatis, floribus in cymulis pedunculatis paucifloris sæpius terminalibus dispositis.

Hab. Kilwa, East tropical Africa, *Dr. Kirk*.

Ramuli graciles ascendentes teretes glabri. *Folia* subcoriacea mucronulata, subtus nervo marginali notata, $\frac{2}{3}$–$1\frac{1}{2}$ poll. longa, 4–7 lin. lata; petiolus 1 lin. longus. *Pedicelli* apice articulati $\frac{1}{10}$–$\frac{1}{2}$ poll. longi. *Flores* $\frac{1}{2}$–$\frac{2}{3}$ poll. longi. *Perianthium* lobis ovatis v. ovato-ellipticis obtusis late imbricatis, squamulis faucis facile in lobos segregatis, margine setuloso-hispidis.—D. Oliver.

Fig. 1. Flower. 2. Perianth laid open. 3. Stamens. 4. Pistil, with vertical section of ovary.

Plate 1195.

PLOCOSPERMA BUXIFOLIUM, *Benth.*

Loganiaceæ, Tribe Gelsemieæ.

Plocosperma, *Benth. in Benth. et Hook. Gen. Pl.* ii. 789.

P. buxifolium, *Benth., species unica.*

Hab. Guatemala, *Skinner*.

Frutex glaber, ramis rigidis elongatis. Folia opposita, brevissime petiolata, ovata v. oblonga, utrinque obtusa, integerrima, coriacea, supra nitida, subtus opaca, costa prominente, $\frac{1}{2}$–1-pollicaria, iis *Buxi sempervirentis* subsimilia. *Flores* in nodis axillaribus ramorum annotinorum v. vetustiorum 2–4-ni in pedunculo brevissimo subracemosi v. interdum solitarii, pedicellis 1–2 lin. longis filiformibus ebracteatis. *Calyx* lineam longus, 5-partitus. *Corolla* tubo brevi subinfundibulari-campanulata, expansa fere pollicem diametro, lobis 5 latis imbricatis. *Stamina* 5, inæqualia, corolla breviora; antherarum loculi paralleli. *Ovarium* 1-loculare, basi in stipitem brevem crassum subcontractum, apice desinens in stylum filiformem apice bis 2-fidum, ramulis ultimis intus stigmatosis; ovula 4, per paria parietibus affixa, 2 inferiora erecta, 2 superiora pendula. *Capsula* linearis, subteres, 3-pollicaris, coriacea, tenuiter ∞-costata sulcataque, ab apice 2-valvis, valva quaque ovulum unum cujusque paris ferente. *Semen* tamen in capsula unicum perfectum, lineare, 2-pollicare, subteres v. compressum, apice coma densa brevique pilorum appendiculatum; testa subcoriacea; albumen tenuiter carnosum; embryo linearis, perfectus tamen ignotus.

The fruit and seed of this plant are exceptional in the order, but the corolla, stamens, and style are very nearly those of *Gelsemium*, only shorter.—G. Bentham.

Fig. 1. Flower. 2. Corolla cut open, showing the stamens and pistil. 3. Pistil. 4. Ovary, longitudinal section. 5. Capsule and seed.

Plate 1196.

MOSTUEA SURINAMENSIS, *Benth.*

Loganiaceæ, Tribe Gelsemieæ.

Mostuea, *Didr.*; *Benth. et Hook. Gen. Pl.* ii. 789.

M. surinamensis, *Benth.*, *sp. nov.*, foliis brevissime petiolatis oblongo-ellipticis acuminatis, cymis laxis pedunculatis, corollæ parvæ limbo tubo subtriplo breviore.

Hab. Surinam, *Hostmann*, *n.* 1128.

Frutex glaberrimus, ramis tenuibus. *Folia* opposita, breviter et acute acuminata, basi cuneata, integerrima, membranacea, 2–4-pollicaria, venis paucis tenuibus. *Cymæ* ad apices ramorum v. in una axilla folio parum breviores, longiuscule pedunculatæ, dichotomæ, ramis filiformibus, bracteis minutis. *Flores* in dichotomiis sessiles v. ramulos ultimos pedicelliformes terminantes, albi. *Calyx* vix $\frac{1}{2}$ lin. longus, alte 5-fidus. *Corolla* $2\frac{1}{2}$ lin. longa, tubo superne ampliato, limbi lobi 5, patentes, æquales, imbricati. *Stamina* infra medium tubum affixa, inclusa, filamentis brevibus; antheræ ovatæ, loculis subparallelis. *Ovarium* 2-loculare, ovulis in quoque loculo 2 collateralibus; stylus apice breviter 2-fidus, ramis late cuneatis 2-fidis superne stigmatosis. *Capsula* compressa, divaricato-2-loba, lobis oblongo-quadratis fere semipollicem longis, ad margines in valvas 2 dehiscentibus. *Semina* in quoque loculo solitaria, compressa, late ovata fere lenticularia, exalata, basifixa. Embryo rectus, in axi albuminis copiosi carnosi eo dimidio brevior; cotyledones angustæ, radicula brevis, infera.

The two, or perhaps three, species of this genus from West tropical Africa include the *Mostuea* (*Leptocladus*) *Thomsoni*, Oliv. in Journ. Linn. Soc. viii. 160, t. 12, which in its lax inflorescence comes nearer to the Surinam species than Didrichsen's original type. It has, however, much smaller leaves and larger flowers.—G. Bentham.

Fig. 1. Flower. 2. Corolla cut open, showing the stamens. 3. Calyx and pistil. 4. Ovary, longitudinal section. 5. Fruit. 6. The same, one lobe open, showing the seeds.

Plate 1197.

BROOKEA DASYANTHA, *Benth.*

Scrophularineæ, Tribe Cheloneæ.

Brookea, *Benth. in Benth. et Hook. Gen. Pl.* ii. 939.

B. dasyantha, *Benth., sp. nov.*, ramulis inflorescentiaque pilis longis mollibus dense villosissimis, corollæ tubo calyce fere duplo longiore.

Hab. Sarawak, Borneo, *Lobb*, *Beccari*, *n.* 1145 *and* 3203.

Frutex videtur, ramulis validis pilis longis mollibus rufescenti-sericeis densissime vestitis. *Folia* opposita, ovata v. superiora angustiora, acuminata, denticulata, basi contracta et in petiolum brevem decurrentia, semipedalia et longiora, crassiuscula, supra viridia scabriuscula et venulis reticulatis impressis rugosa, subtus dense cano-tomentosa costa venisque primariis pinnatis villosis. *Spicæ* in dichotomiis v. inter folia ultima sessiles v. breviter pedunculatæ, 3–5-pollicares, rhachi calycibusque dense villosissimis. *Flores* oppositi v. sparsi, subsessiles, ad axillam bracteæ reflexæ persistentis 3–5 lin. longæ. *Calyx* sub anthesi 7–8 lin. longus, oblongo-tubulosus, 4–5-dentatus, fructifer pollicaris, ampliatus ore contracto. *Corollæ* tubus cylindraceus, superne ampliatus, leviter incurvus, pollicaris v. paullo longior, limbus oblique expansus, ad 9 lin. diametro, lobis 5 rotundatis 2 posticis exterioribus. *Stamina* 4, didynama, prope basin corollæ affixa, tubo paullo breviora; antherarum loculi divergentes demum divaricati, apice subconfluentes, staminis postici rudimentum 0. *Ovarium* 2-loculare, ovulis in placentis prominulis numerosissimis. *Stylus* apice breviter lateque 2-lamellatus. *Capsula* ovoidea, calyce subclauso inclusa, glabra, septicide dehiscens. *Semina* minuta, subglobosa, placentas densissime obtegentia.

The genus has some general resemblance to the Central American *Uroskinnera*, but readily distinguished by the absence of the upper staminodium and the septicidal not loculicidal dehiscence of the capsule. A second species (*B. tomentosa*, Benth.) was gathered also in Sarawak by Lobb, very nearly allied to *B. dasyantha*, but with the indumentum of the branches and inflorescence shortly tomentose, the leaves velvety on the upper side and scarcely white underneath, less decurrent on the longer petiole, the calyx smaller, and the corolla-tube less exserted. Said to be a shrub of 10 feet, with white flowers.—G. Bentham.

Fig. 1. Bud. 2. Flower. 3. Corolla cut open, showing the stamens. 4. Anther. 5. Pistil. 6. Ovary, transverse section.

Plate 1198.

MONOPYLE MACROCARPA, *Benth. var.*

Gesneraceæ, Tribe Gesnereæ.

Monopyle, *Benth. in Benth. et Hook. Gen. Pl.* ii. 997.

M. macrocarpa, *Benth., sp. nov.*, folio majore cujusque paris rarius utroque longiuscule petiolato oblongo-elliptico acuminato basi valde inæquali, floribus longe pedicellatis ad axillas v. in pedunculo terminali fasciculatis, calycis lobis longiuscule linearibus, tubo basi vix obtuso fructifero oblongo-lineari.

Var. *isophylla*, foliis cujusque paris parum inæqualibus.

Hab. The typical form in Eastern Peru on rocky streams near Tarapoto, *Spruce*, *n.* 4151, and the variety here figured, at the foot of Mount Chimboraço, *Spruce*, a single specimen.

Herba e radice repente ascendens v. laxe erecta, parum ramosa, 1–3-pedalis, pubescens. *Folia* in forma typica pleraque valde disparia, maximum oblongo-ellipticum, acuminatum, obtuse serratum, basi valde inæquale, subsemipedale, supra virens scabriusculum, subtus subrubescens molliter pubescens, petiolo semipollicari v. longiore fultum, opposito minimo lanceolato stipuliformi ; adsunt tamen hinc inde paria minus inæqualia et in forma delineata pleraque (nec omnia) subæqualia. *Flores* in specimine delineato in una axilla 2–4-ni, pedunculo communi brevissimo, in forma typica pedunculo communi terminali fulti, pedicellis per anthesin vix semipollicaribus, post anthesin elongatis. Bracteæ ad basin pedicellorum parvæ. *Calycis* tubus omnino adnatus, sub anthesi obovoideus, basi acutus v. vix obtusus, vix 2 lin. longus, cano-pubescens, post anthesin valde elongatus ; lobi 5, lineares, 3–4 lin. longi. *Corolla* albida superne pallide violacea ; tubus subpollicaris, latus, superne ampliatus fere campanulatus ; limbus oblique patens, pollicem diametro, lobis 5 latis, 3 posticis paullo altius connatis antico cæteris majore. *Stamina* 4, didynama, ima basi corollæ affixa, inclusa, cum rudimento minimo staminis quinti postici ; filamenta filiformia, arcuata ; antheræ conniventes non tamen cohærentes, loculis subglobosis divergentibus. *Ovarium* inferum, vertice brevissime conicum ; stylus brevis, apice stigmatoso vix dilatato. *Capsula* infera, oblongo-linearis, curvula, subpollicaris, calycis lobis haud accretis coronata, vertice inter lobos parvo indiviso, dorso infra lobos rima longitudinali dehiscens. *Semina* ut in tota tribu numerosa minima.

I do not feel certain that the two plants from rather distant stations which I have united under the above name are strictly conspecific,

though I believe them to be so. In the typical form from Tarapoto the larger leaf of each pair is about 6 inches long, the smaller opposite one sessile, or nearly so, and $\frac{1}{4}$ to $\frac{1}{2}$ inch; but one of these specimens bears also two pairs of leaves more like those represented in the plate. The specimens from which the artist made his general outline have most of the leaves 3 to 4 inches long, and nearly equal in each pair, but these also have two or three of their pairs almost as unequal as in the typical form.

Fig. 1. Flower. 2. Corolla cut open, showing the stamens. 3. Stamens. 4. Anther. 5. Fruit.

The genus evidently comprises several species, of which the following, as far as can be judged from herbarium specimens, appear to be perfectly distinct:—

2. *M. macrophylla*, Benth., folio majore cujusque paris longiuscule petiolato ovali- v. oblongo-elliptico longe acuminato basi valde inæquali, floribus longe pedicellatis, fasciculis oppositis 2-floris per paria secus pedunculum longum dissitis, calycis tubo post anthesin breviter oblongo basi postice gibbo, lobis longiuscule linearibus.—Folia majora 8–10-pollicaria, opposito 1–2-pollicari. Corollæ (violaceæ?) ventricoso-campanulatæ, ad 9 lin. longæ.

Hab. Columbia, *Lobb*.

3. *M. subsessilis*, Benth., folio majore cujusque paris subsessili oblongo-elliptico acuminato basi inæqualiter contracto, opposito nano, floribus brevissime pedicellatis, fasciculis oppositis 2–3-floris in pedunculo terminali geminis v. per paria dissitis, calycis tubo fructifero oblongo subæquali lobis longiusculis lineari-lanceolatis.—Folia majora 6–10-pollicaria. Calycis tubus per anthesin $1\frac{1}{2}$ lin. fructifer 3–4-lin. longus, lobi quam in cæteris speciebus latiores, 3–4 lin. longi, in calyce fructifero immutati. Corolla campanulata, $1\frac{1}{4}$ poll. longa, violacea basi sola pallescens.

Hab. Tarapoto, with the *M. macrocarpa*, *Spruce*, *n.* 4151*. Besides the above-mentioned characters, the stamens appear to be shorter, and the stigmatic apex of the style shortly 2-lobed.

A specimen from Costa Rica, *Endres*, evidently allied to the three preceding species, does not precisely agree with either, but is insufficient for accurate determination.

4. *M. paniculata*, Benth., folio majore cujusque paris petiolato ovato-oblongo acuminato basi valde inæquali, opposito parvo v. nano, cymis laxis pedunculatis in panicula laxa terminali divaricatis, calycis tubo brevi postice gibbo, fructifero . . . . lobis breviter linearibus.—Herba 4-pedalis. Folia majora 6–8-pollicaria. Paniculæ rami oppositi tenues distantes divaricati, cymæ dichotomæ paucifloræ, pedicellis 2–3 lin. longis. Corolla subcampanulata, ad 9 lin. longa, extus carnea, intus violaceo-maculata.

Hab. Ecuador, Mount Abitagua, *Spruce*, *n.* 5071.

5. *M. leucantha*, Moritz, Pl. Exs., folio majore cujusque paris petiolato ovato v. ovali-oblongo acuminato basi inæqualiter rarius æqualiter cordato v. obtuso, opposito subæquali v. minore, florum fasciculis v. cymis abbreviatis in pedunculo terminali per paria dissitis, calycis fructiferi tubo oblongo basi oblique obtuso, lobis brevibus.—Folia valde variabilia, nunc omnia parum inæqualia 3–4-pollicaria latiuscula, nunc majora 6–8-pollicaria opposito dimidio minore. Flores semipollice paullo longiores. Corolla alba, late at oblique campanulata.

Hab. Caraccas, *Moritz*, *n.* 868; *Birschell*, *Linden*, *n.* 254; *Fendler*, *n.* 794; Ocaña, *Schlim*, *n.* 22.

6. *M. racemosa*, Benth., foliis cujusque paris subæqualibus petiolatis ovato-oblongis acuminatis basi contractis, pedicellis 1-floris oppositis in racemum terminalem simplicem dispositis.

Hab. New Grenada, from whence it has been introduced into Veitch's nursery.

This species, about to be figured in the *Botanical Magazine*, differs from all the others in the leaves apparently always equal in each pair and the simple inflorescence. The calyx-lobes are also rather broader, and the corolla rather longer for its breadth, than in the several species from which I drew up the generic character.—G. Bentham.

Plate 1199.

ANODISCUS PERUVIANUS, *Benth.*

Gesneraceæ, Tribe Gesnereæ.

Anodiscus, *Benth. in Benth. et Hook. Gen. Pl.* ii. 998.

A. peruvianus, *Benth., species unica.*

Hab. Peru, *Ruiz and Pavon*, along streams and in cultivated places about Tarapoto, rare. *Spruce*, *n.* 4400.

Herba erecta, valida, 3-pedalis, pube brevi præsertim in inflorescentia viscosa villosa. *Folia* opposita, in quoque pari subæqualia, ovali-oblonga v. lanceolata, acuminata, crenulata, basi in petiolum contracta, 6–10-pollicaria, crassiuscula, supra scabro-pubescentia, subtus molliter tomentoso-pubescentia, summa multo minora. *Flores* parvi, albi, secus rhachin racemi alterni v. sparsi rarius oppositi, racemo terminali semipedali et longiore, additis nonnullis brevioribus ad axillas foliorum superiorum; pedicelli 2–3 lin. longi v. fructiferi duplo longiores, patentes, ad axillam bracteæ parvæ solitarii. *Calycis* tubus adnatus

obovoideo-turbinatus, sub anthesi 2 lin. longus, lobi 5, tubo breviores, patentes. *Corolla* 3 lin. longa, breviter tubuloso-campanulata, limbo subpatente parum obliquo, lobis 5 brevibus latis parum inæqualibus. *Stamina* 4, didynama, basi corollæ affixa, filamentis brevibus; antheræ liberæ, ovatæ, loculis parallelis distinctis, connectivo latiusculo apice breviter appendiculato. *Discus* obsoletus. *Ovarium* semi-inferum, stylus brevis, stigmate breviter 2-fido. *Capsula* ultra medium infera, cum rostro supero incurvo-conico 2-valvi semipollicaris. *Semina* normalia, minima, numerosa.

This plant has at first sight much of the aspect and inflorescence of the *Gesnera allagophylla*, but the flowers are much smaller, and differ widely in their structure as well as in colour, showing rather an affinity with *Monopyle* and *Phinæa*.—G. Bentham.

Fig. 1. Flower (the throat represented too narrow, and the limb too large and spreading). 2. Corolla cut open, showing the stamens. 3. Two stamens (the tip of the connective omitted). 4. Calyx and pistil. 5. Fruit.

Plate 1200.

NERIACANTHUS PURDIEANUS, *Benth.*

Acanthaceæ, Tribe Justicieæ.

Neriacanthus, *Benth. in Benth. et Hook. Gen. Pl.* ii. 1096.

N. Purdieanus, *Benth., species unica.*

Hab. Jamaica, on rocks near Christiana, Manchester, rare, *Purdie.*

Frutex pulcherrimus, 8-pedalis, partibus novellis pube minuta canescentibus cæterum glaber. *Folia* opposita, petiolata, obovata v. oblonga, $1\frac{1}{2}$–$2\frac{1}{2}$-pollicaria, obtusissima, basi contracta, coriacea, marginibus recurvis, pennivenia, venis paucis subtus prominulis. *Flores* lilacini, ad axillas bractearum oppositarum solitarii, sessiles, in spicam brevem terminalem dispositi. Bracteæ herbaceæ, ellipticæ, obtusissimæ, 6–9 lin. longæ, 3–5-nerves; bracteolæ 0. *Calyx* 5-partitus, ad 2 lin. longus, segmentis lineari-lanceolatis subæqualibus. *Corollæ* tubus 8–9 lin. longus, cylindraceus, ad faucem parum ampliatus, limbus patens subplanus; lobi 5 obovati, postici semipollicares, antico paullo majore, æstivatione imbricati, posticis interioribus antico extimo. *Stamina* 4, didynama, tubo inclusa; antheræ lineares, 1-loculares, muticæ; staminodium posticum breviter filiforme. *Stylus* filiformis, apice integer. *Ovula* in quoque loculo ovarii 2. Capsula ignota.

Fig. 1. Flower. 2. Corolla cut open, showing the stamens and pistil. 3. Stamen. 4. Pistil. 5. Ovary, longitudinal section.

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W.H. Fitch del et lith.

J.N. Fitch imp.

Pentachaeta gracilis *Benth.*

Pl 1102

W. H Fitch. del. et lith.

J N Fitch imp.

Stachycephalum mexicanum *Sch. Bip.*

W.H.Fitch del et lith.

J.N.Fitch imp

Olivaea tricuspis, *Sch. Bip.*

W.H.Fitch del.et lith.

J.N.Fitch imp.

Clappia aurantiaca. *Benth.*

W.H.Fitch. del. et lith.

J.N.Fitch imp

Clappia suaêdaêfolia, *A. Gr.*

W.H Fitch. del. et lith.

J N Fitch imp

Brachyactis menthodora *Benth*

W.H.Fitch.del.et lith.

J.N.Fitch imp

Lachnophyllum Noëanum *Boiss.*

W.H. Fitch del et lith

J.N. Fitch imp

Fresenia fasciculata. *Bolus.*

W H Fitch del. et lith

J N Fitch imp

Oxylaena acicularis *Benth.*

W H Fitch ael et lith.

J N F. Lamp

Homochaëte conferta, *Benth.*

W H Fitch del et lith

J.N.Fitch imp

Calostephane divaricata, *Benth.*

W H Fitch del et lith

J N Fitch imp

Ondetia linearis, *Benth.*

WH.Fitch.del. et lith.

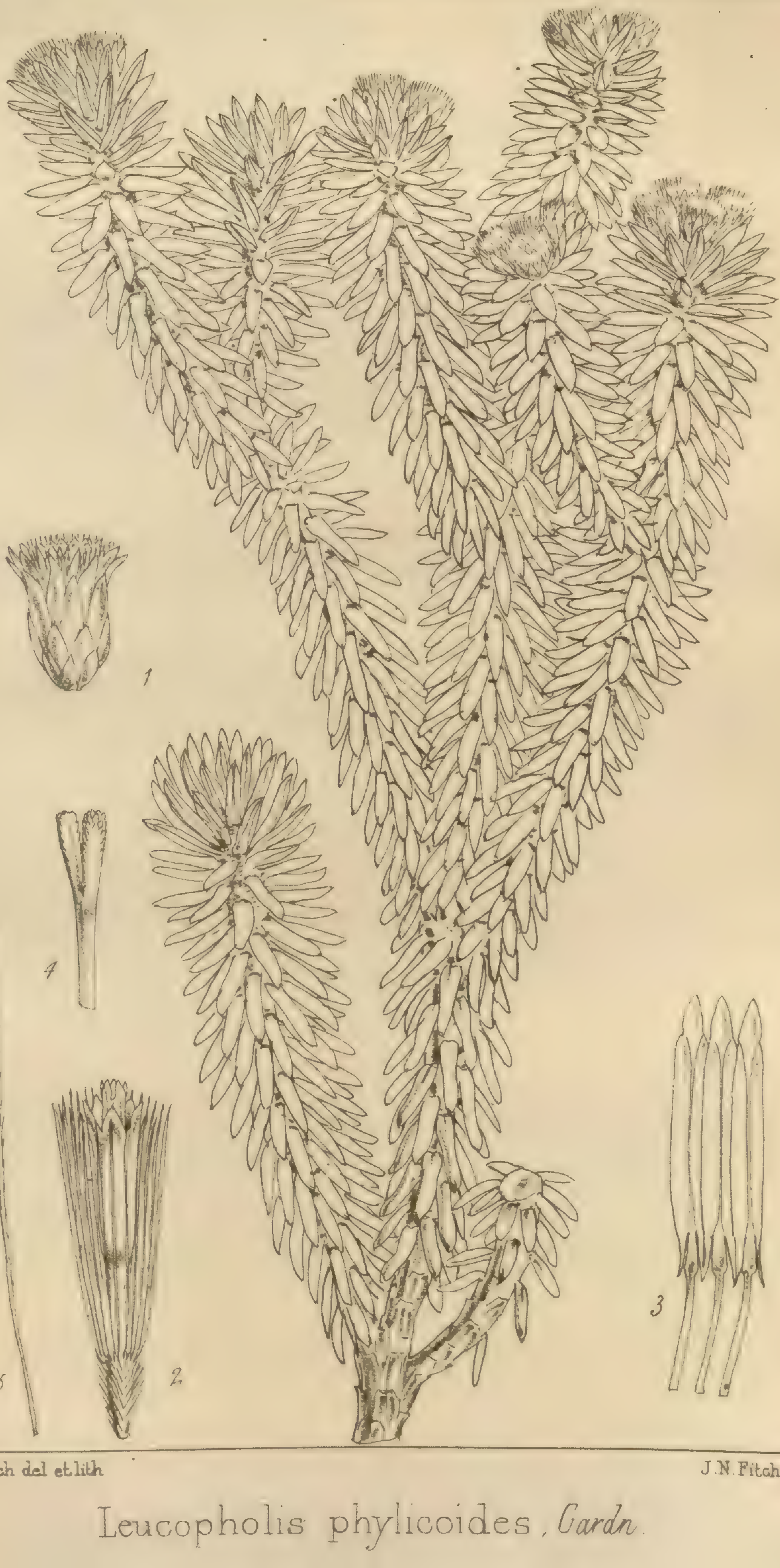
J.N Fitch imp

Lopholaëna platyphylla *Benth.*

W.H.Fitch.del.et.lith.

J.N.Fitch,imp

Senecio retortus, *Benth.*



W.H.Fitch del et lith

J.N.Fitch imp

Leucopholis phylicoides, *Gardn.*

W.H.Fitch del et Lith

J.N.Fitch imp

Desmanthodium perfoliatum, *Dcne*

W.H.Fitch. del. et lith.

J.N.Fitch. imp.

Aganippea bellidiflora, D.C.

W.H.Fitch del et lith.

J.N.Fitch imp.

Axiniphyllum corymbosum. *Benth*

W.H.Fitch del et lith.

J.N.Fitch imp

Camptostemon Schultzii, *Mast.*

W.H.Fitch.del.et.lith.

J.N.Fitch imp

Corysanthes Cheesemani. *Hk.f*

W.H Fitch, del. et lith

T.N Fitch. imp

Normandia neocaledonica. *Hkf.*

W.H Fitch del et lith.

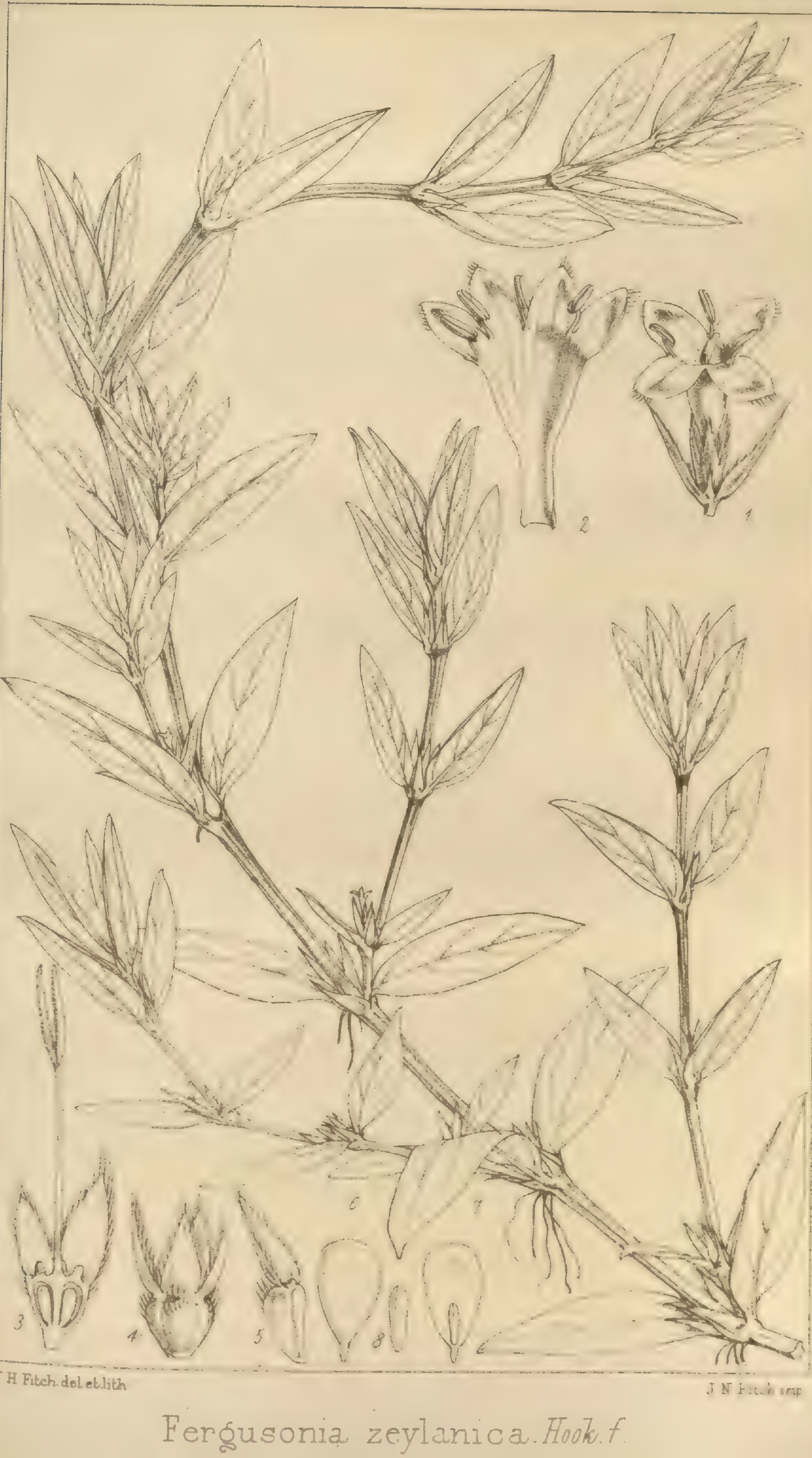
J.N.Fitch imp

Didymochlamys Whitei, *Hk.f.*

W.H Fitch del. et lith.

J N Fitch imp

Corynula pilosa, *Hook. f.*



W H Fitch. del et lith

J N Fitch imp

Fergusonia zeylanica. *Hook. f.*

W H Fitch del. et lith.

J N Fitch imp

Ceratopyxis verbenacea. *Hook. f.*

WH.Fitch.del.et lith.

J.N.Fitch imp

Aulacocalyx jasminiflora, *Hook f*

W.H.Fitch del. et lith.

J.N.Fitch imp.

Belonophora coffeoides. *Hook. f.*

W.H.Fitch.del.et.lith.

J.N.Fitch imp

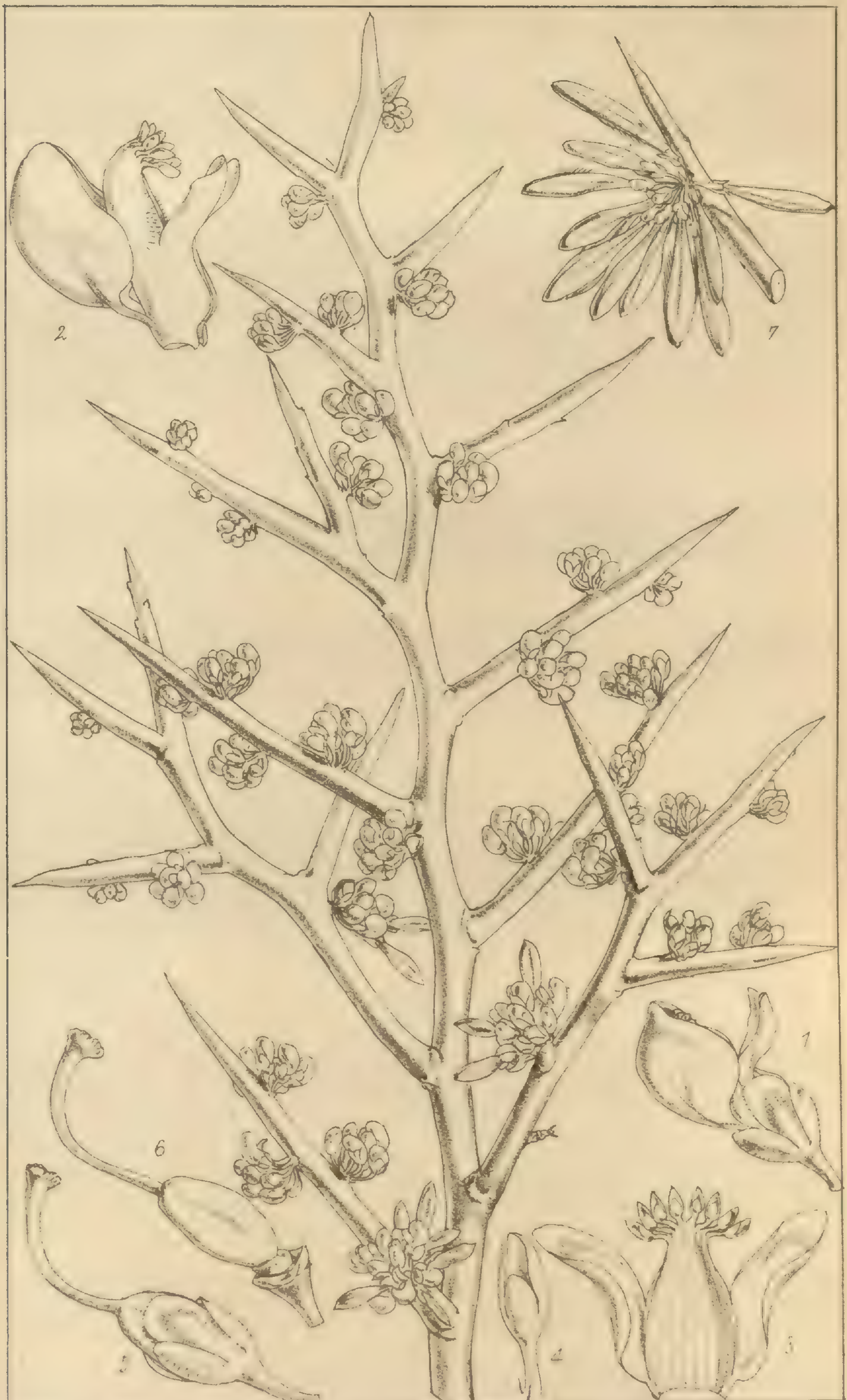
Omaloclados colorata, *Hook.f.*

W.H.Fitch del et lith

J.N.Fitch imp

Psilanthus Mannii, *Hook. f.*

Pl 11.30



W H Fitch del et lith.

J N Fitch imp

Hualania colletioides. *Ph*

W.H.Fitch.del.et.lith.

J.N.Fitch imp

Hymenocardia ulmoides, *Oliv.*

W.H.Fitch del et lith

J.N.Fitch imp

Hymenophyllum Cheesemani *Baker*

W.H. Fitch, del. et lith.

J.N. Fitch imp

Bothriocline Schimperi, *O.&H.*

W H. Fitch. del. et lith.

J.N Fitch imp

Heterophyllaea pustulata. *Hk f*

W.H.Fitch del.et lith.

J.N.Fitch imp

Sphacophyllum Bojeri, *Benth.*

W.H Fitch del et lith.

J.N.Fitch imp

Coleocoma centaurea, *F.Muell.*

W.H.Fitch del et lith.

J.N.Fitch imp

Chiliocephalum Schimperi, *Benth.*

J N Fitch imp

W H Fitch del. et lith.

Denekia capensis, *Thunb.*

W H Fitch del et lith

J N Fitch imp

Luina hypoleuca, *Benth.*

W.H. Fitch del et lith.

J.N.Fitch imp

Congrothamnus divaricatus, *Steetz*

W H Fitch del et lith

J.N Fitch. imp

Cremanthodium reniforme, *Benth.*

W.H Fitch del et lith.

J N.Fitch imp

1. Cremanthodium palmatum, *Benth.*
2. Cremanthodium pinnatifidum *Benth*

W H Fitch del. et lith.

J.N.Fitch imp

Thespidium basiflorum, *F Muell.*

W h ritch del et lith

J N Fitch imp

Adelostigma senegalensis, *Benth.*

W.H. Fitch del et lith.

J N. Fitch. imp.

Asemnanthe pubescens, *Hook. fil.*

W.H.Fitch.del.et lith. J.N.Fitch.imp.

Synaptanthus tillæaceus, *Hook. fil.*

1

3

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4

W. H Fitch del et lith

J.N Fitch imp

Stilpnophyllum lineatum. *Hook. f.*

W.H.Fitch.del.et.lith.

J.N.Fitch imp

Chalepophyllum guyanense *Hook.fil.*

W.H.Fitch.del.et lith.

J.N.Fitch imp

Leptoskela ruellioides, *Hook.fil.*

W H Fitch del. et lith.

J N Fitch imp

Solenandra ixorioides. *Hook, fil.*

W.H.Fitch del et lith

J.N.Fitch imp

Hekistocarpa minutiflora, *Hook fil*

W.H. Fitch del. et lith.

J. N. Fitch imp

Salmeopsis Claussenii, *Benth.*

W.H.Fitch del et lith

J.N.Fitch imp

Otopappus verbesinoides *Benth.*

W H Fitch del et lith.

J.N.Fitch imp

Hymenostephium mexicanum, *Benth.*

W.H.fitch.del.et.lith

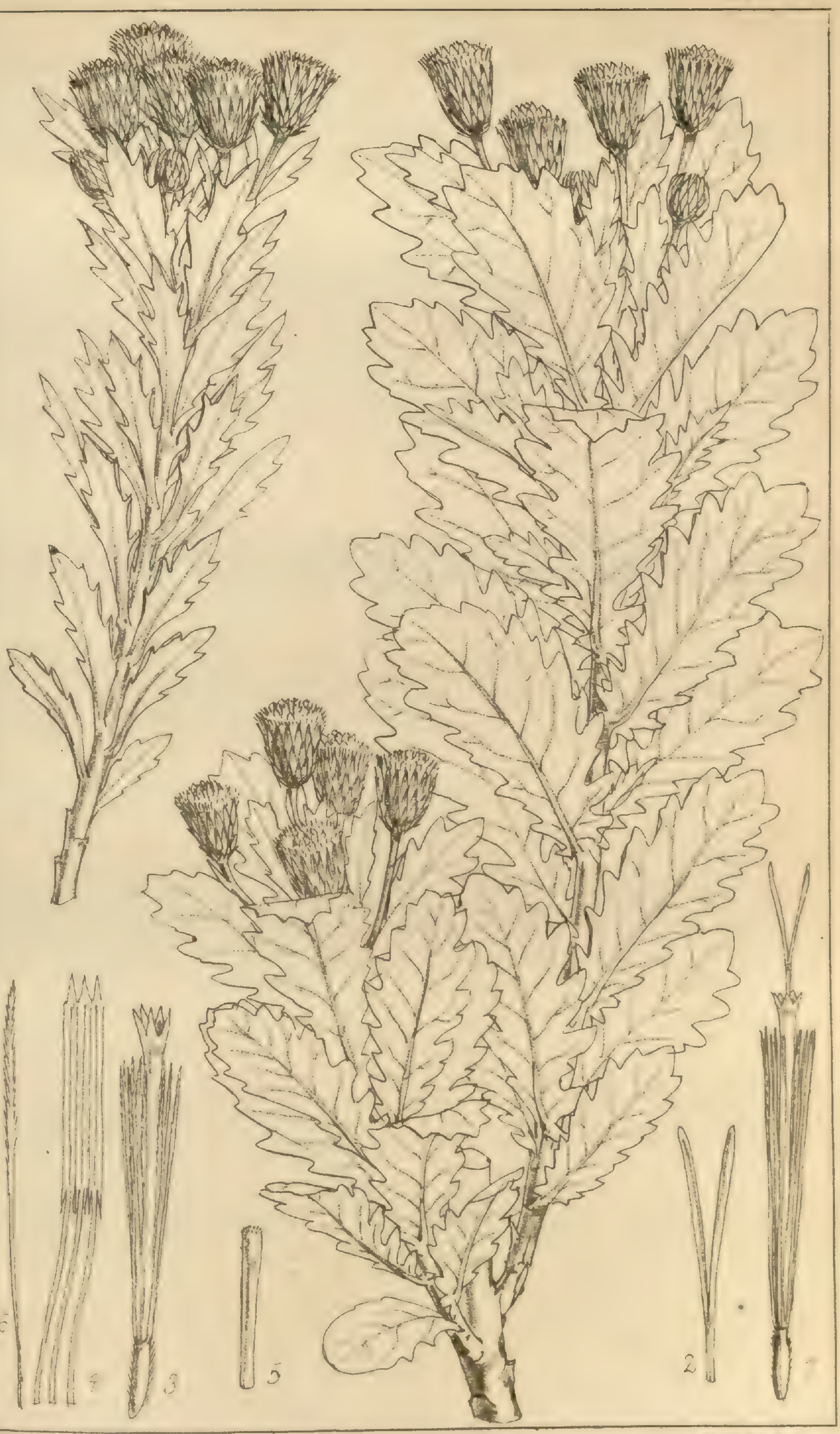
J.N.Fitch imp

Gymnopentzia bifurcata, *Benth.*

W.H.Fitch del. et lith.

J.N.Fitch imp.

Pluchea pinnatifida, *Hook. f.*



W H Fitch del et lith.

J.N.Fitch imp

Pluchea frutescens. *Benth*

W H Fitch del. et lith.

J. N Fitch imp

Cyclophyllum Deplanchei, *Hook.f.*

W.H.Fitch del et lith.

J.N Fitch imp

Notopora Schomburgkii *Hook. f.*

W.H.Fitch del.et lith.

J.N.Fitch imp.

Rigiolepis borneensis, *Hook.f.*

W.H.Fitch.del.et lith

J.N.Fitch imp

Guthriea capensis, *Bolus.*

W. H. Fitch del. et lith.

J. N. Fitch, imp.

Plagiocarpus axillaris, *Benth*

W H. Fitch del et lith

J.N Fitch imp

Bolusia capensis, *Benth.*

W H.Fitch del. et lith.

J. N Fitch imp

Koompassia malaccensis, *Maing.*

W H.Fitch del et lith.

J.N.Fitch imp

Acacia reniformis, *Bentn.*

W H Fitch. del. et lith.

J N Fitch imp

Acacia crassifolia, *Gray.*

W. H Fitch. del et lith

J. N F[illegible]

Calliandra colletioides, *Griseb*

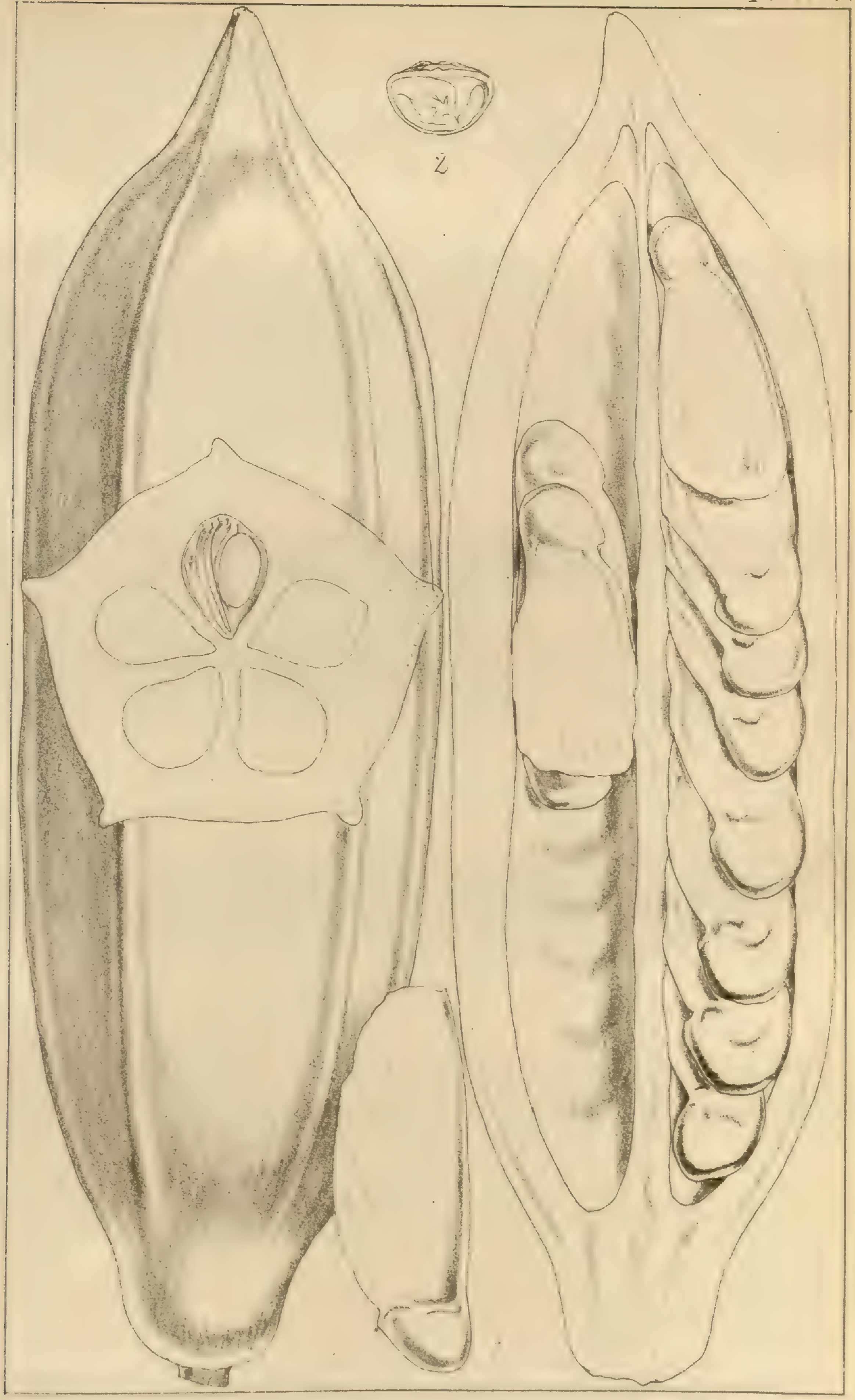
W. H. Fitch del. et lith.

J. N. Fitch imp.

Pithecolobium Hystrix. *Benth.*

J.N.Fitch. imp

Bernoullia flammea. *Oliv.*



Bernoullia flammea. *Oliv.*

W.H.Fitch del. et lith.

J.N.Fitch imp

Morina persicoides *Benth.*

W.H.Fitch del.et.lith.

J.N.Fraan imp

Omphacomeria acerba, A.DC.

3

1

2

W H Fitch del et lith.

J N Fitch imp

Anthobolus foveolatus. *F. Muell.*

P.U.1174.

W.H.Fitch del et lith.

J.N.Fitch imp

Aphananthe philippinensis *Planch.*

W.H.Fitch del et lith

J.N Fitch imp.

Phlebocarya ciliata, *Br.*

W H. Fitch del et lith

J.N Fitch, imp.

Phlebocarya filifolia. *F Muell.*

W. H. Fitch, del et lith.

J. N. Fitch imp

Heterotoma macrocentron, *Benth*

W H. Fitch, del. et lith.

J.N. Fitch, imp.

Dialypetalum floribundum, *Benth.*

W. H. Fitch, del. et lith. J. N. Fitch, imp.

Amblyocalyx Beccarii, *Benth.*

W. H Fitch, del et lith.

J. N. Fitch, imp

Notonerium Gossei, *Benth.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Pleiocarpa mutica *Benth.*

W. H. Fitch, del. et lith.

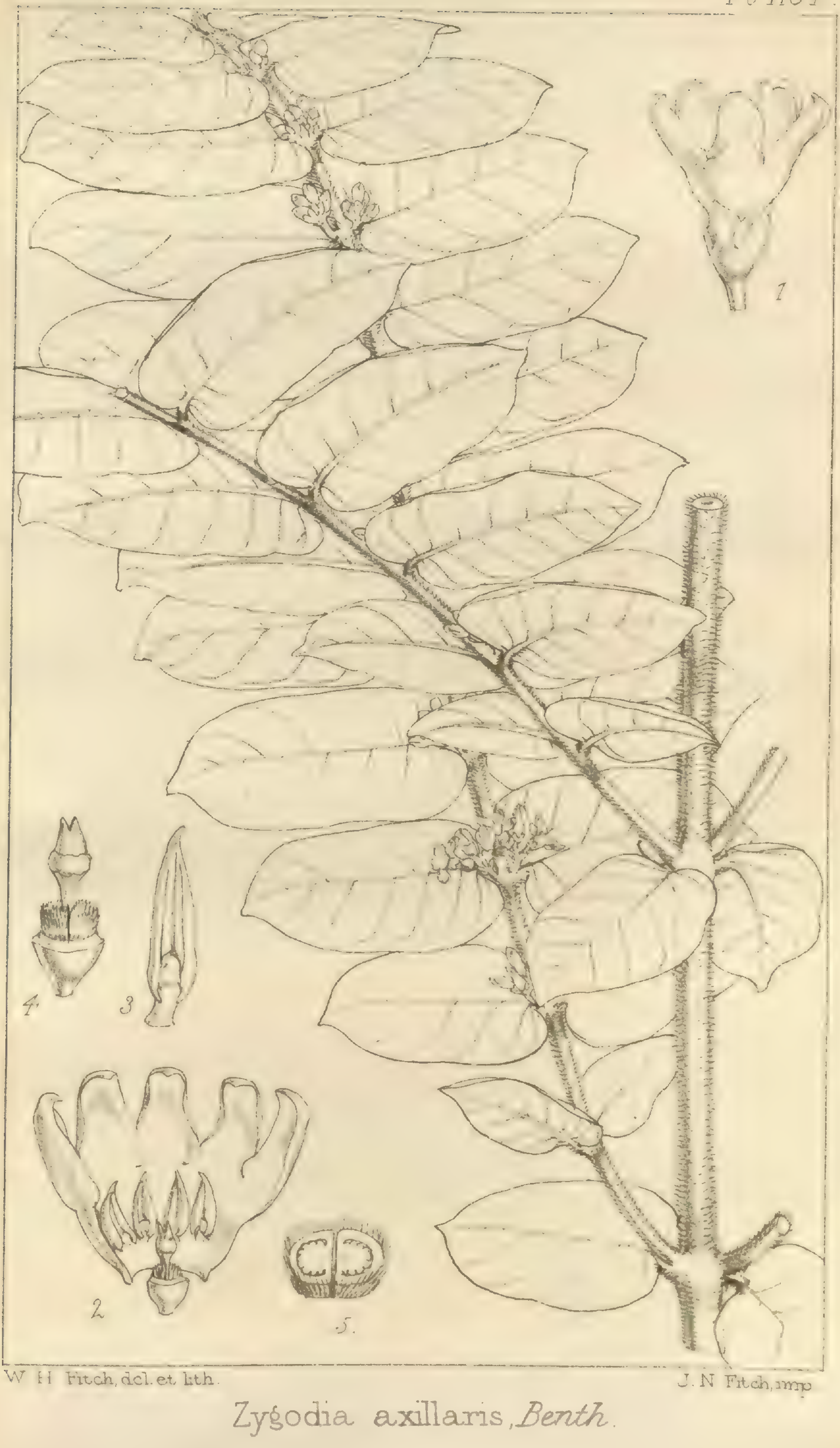
J. N. Fitch, imp

Pleiocarpa rostrata, *Benth.*

W. H. Fitch. del. et lith.

J. N. Fitch imp

Pycnobotrya nitida, *Benth.*



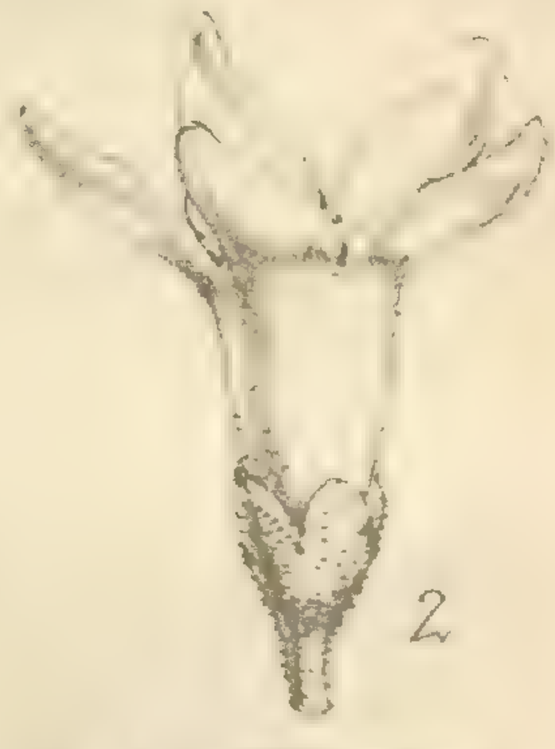
W H Fitch, del. et lith.

J. N Fitch, imp

Zygodia axillaris, *Benth.*

1

4



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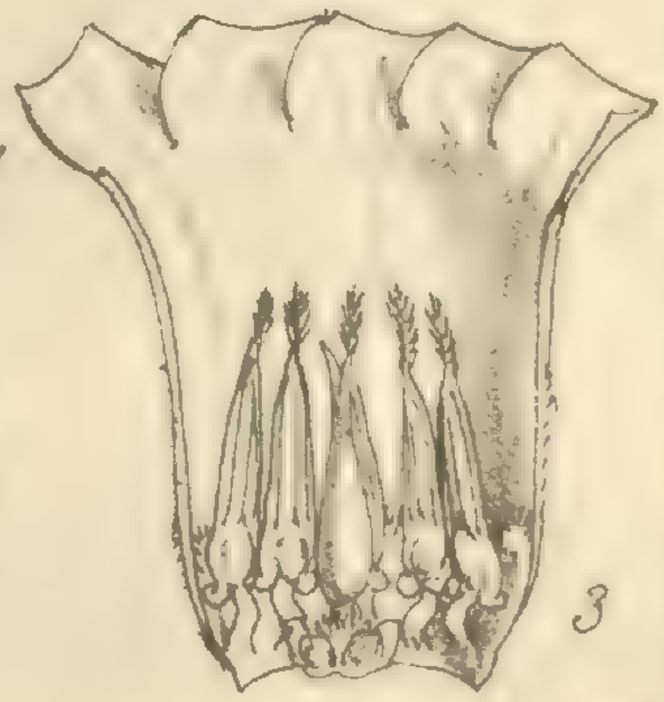
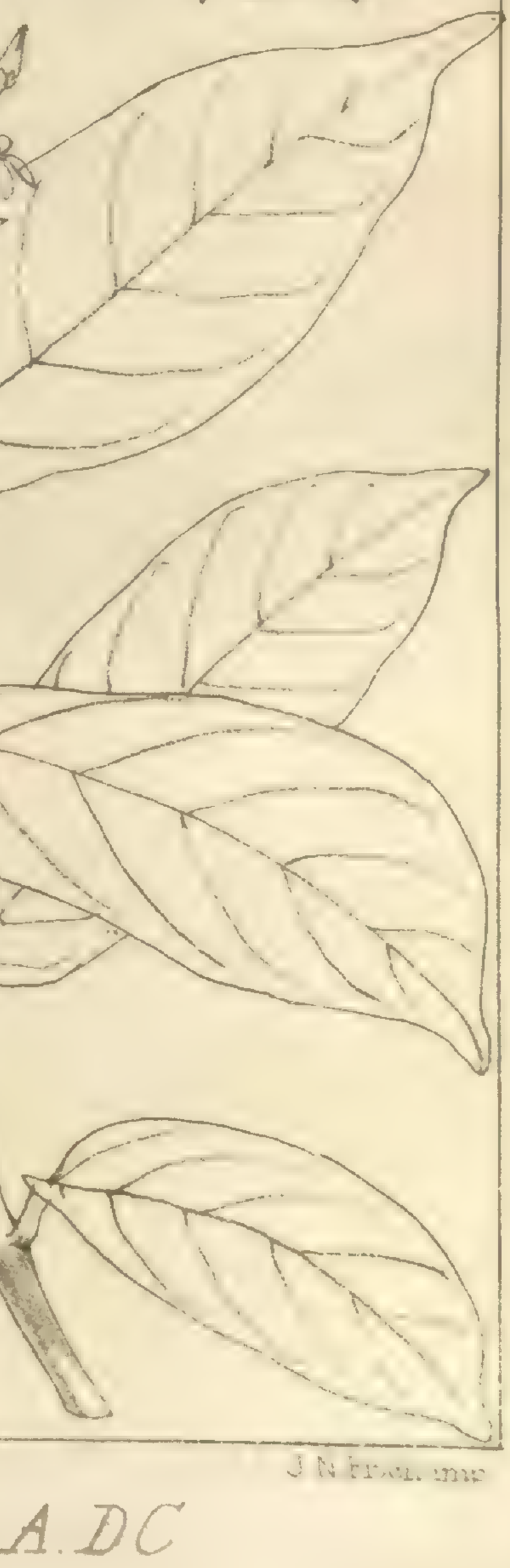


3

5



6

W.H. Fitch, del. et lith

J.N. Fraser, imp.

Motandra guineensis, *A. DC*

W.H.Fitch, del. et lith.

J.N.Fitch, imp.

Gymnolaema Newii, *Benth.*

W H. Fitch del et lith.

J.N. Fitch, imp

Ectadiopsis nigritana, *Benth.*

W.H. Fitch del et lith

J.N. Fitch, imp

Amblystigma hypoleucum, *Benth.*

W.H.Fitch, del. et lith.

J.N.Fitch, imp.

Rhynchostigma racemosa, *Benth*

W.H.Fitch, del. et lith

J.N.Fitch, imp.

Sphaerocodon obtusifolium, *Benth*

W.H Fitch, del. et lith

J N Fitch, imp

Xanthus urceolatus, *Benth.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Lysidice rhodostegia, *Hance*.

7

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W. H Fitch, del. et lith.

J. N. Fitch, imp.

Hirtella zanzibarica, *Oliv*

W.H Fitch, del. et lith.

J.N. Fitch, imp.

Synaptolepis alternifolia, *Wight*

1.

2.

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W.H.Fitch, del. et lith.

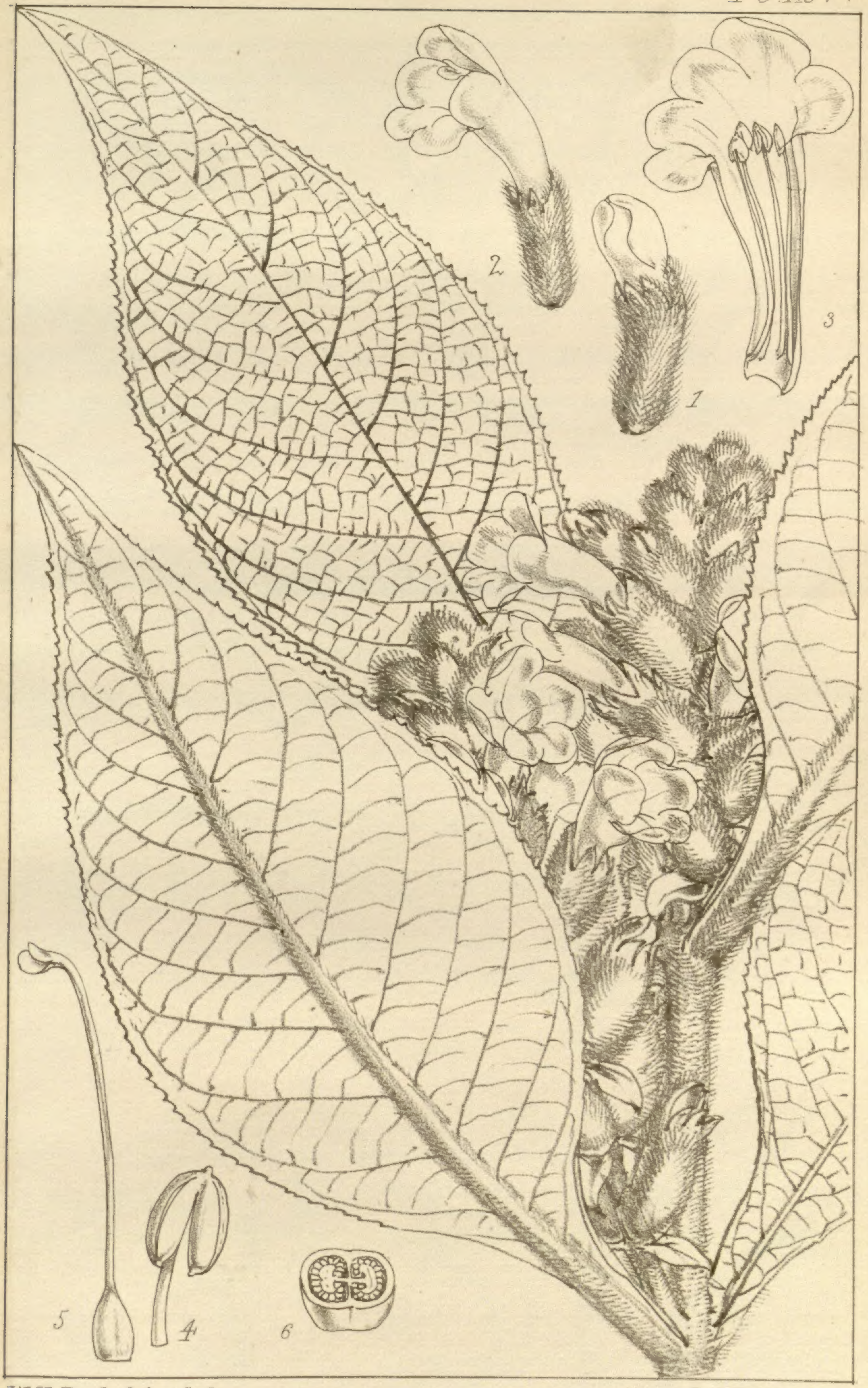
J.N.Fitch, imp

Plocosperma buxifolium. *Benth.*

W H. Fitch, del. et lith.

J. N Fitch, imp.

Mostuea summifera, *Benth.*



W.H.Fitch, del. et lith.

J.N.Fitch, imp.

Brookea dasyantha, *Benth.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Monopyle macrocarpa, *Benth.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Anodiscus peruvianus, *Benth.*

W.H.Fitch, del. et lith.

J.N.Fitch, imp.

Neriacanthus Purdieanus, *Benth.*